ENGINEERING NEWS-RECORD

A McGRAW-HILL PUBLICATION

Building for the Best

WITH A HORTON WATERSPHERE

The Minneapolis-Honeywell Stinson Boulevard Plant in Minneapolis, Minnesota supplies many aeronautical instruments and devices for our Country's air forces. Building for the best, this plant deserves the best . . . so when planning an adequate water system for industrial use and fire protection, Minneapolis-Honeywell had a 75,000-gal. Horton Watersphere installed. This modern welded steel structure assures the company of a dependable gravity water supply always ready and available in case of power failure or emergency.

Water for the plant is pumped from two wells on company property, both approximately 500 feet deep. Prior to the sinking of the wells, water was purchased from the city.

Many plants throughout the country have found a Watersphere the logical answer to a better, more dependable water system. Their modern, streamlined beauty make them harmonize with the surroundings. They are available in standard capacities from 25,000 to 250,000 gallons. Write our nearest office for quotations or information.

75,000 gallon Horton Watersphere 90 ft. to bottom, built for the Minneapolis-Honeywell Regulator Company, Minneapolis, Minnesota. This smooth, welded steel structure provides water for industrial and domestic use and fire protection for 320,000 sq. ft. of floor area.

CHICAGO BRIDGE & IRON COMPANY

Atlanta, 3	2125 Healey Building	Detroit, 26	1506 Lafayette Building	Philadelphia, 3	1623—1700 Walnut St., Building
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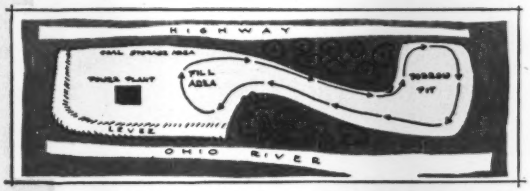
Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY, and GREENVILLE, PA. In Canada: HORTON STEEL WORKS, LIMITED, FORT ERIE, ONT.

DRY FEET FOR CINCINNATI POWER PLANT

3 LPC MOTOR SCRAPERS

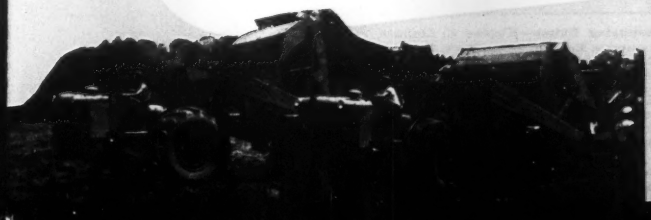
BUILD 1,500,000-YD. LEVEE TO PROTECT IT FROM THE OHIO RIVER



Here's a power plant that will keep dry and operating come Hell or high water, now that it's protected from Ohio River floods. Richter Transfer Co., of Cincinnati, is using three TS 300 Motor Scrapers to build a levee around the Cincinnati Gas & Electric Company's power house at New Richmond, Ohio, right on the river's bank. They are also leveling for a coal storage area adjacent to the power plant. It's a tough operation that calls for the best in earthmoving equipment.

On this job, Richter Transfer Co. is moving approximately 1,500,000-yds. of heavy, wet clay with their three TS 300s. Each Motor Scraper is hauling 50 loads a day on a 6000-ft. cycle, and getting a 15-yd. pay load every trip. Ejection of the sticky clay is no problem with the Motor Scraper's positive forced ejection *plus* the extra high apron lift. There's no chance for material to jam between the ejector and the apron. Extra power and big tires move the rigs through the heavy fill area without bogging down.

It's Another Profitable Job for RICHTER TRANSFER CO., Cincinnati, Ohio



It's no wonder more and more profit-conscious outfits like Richter Transfer Co. are using TS 300 Motor Scrapers for their toughest jobs, because when a rig handles the tough ones easily, it's a profit-producer for every earthmoving job. With TS 300s you get really big capacity . . . 14-cu. yds. struck and 18-cu. yds. heaped. That means greater pay loads each trip. Speeds in excess of 22 miles per hour mean more trips per hour. Easy loading characteristics and positive forced ejection, plus an 8' 9" front apron opening, cut valuable seconds off the operating cycle. Big power . . . with your choice of two diesel engines, a 280 HP Buda or a 275 HP Cummins, gives you power to spare in the pit or in the fill, and insures top working speeds at all times.

Whether your job calls for one unit or a dozen, it will pay you to check all the profit-making features of TS 300 Motor Scrapers. See your LaPlant-Choate distributor today.

LAPLANT CHOATE

MANUFACTURING CO., INC. ® CEDAR RAPIDS, IOWA, U. S. A.

Cable-operated Scrapers in 6-, 8- and 14-yd. sizes for all makes of track-type tractors.

3- and 4-yd. Scrapers for track-type and rubber-tired industrial tractors.

Hydraulic and Cable-operated Dozers.

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STEVENS
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TYPE B

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The STEVENS Type B Recorder keeps permanent records of flow and totalizes volume of liquids passing through weirs, Parshall flumes, or other measuring structures. Models also available to record head only, if desired.

- **Standard circular chart automatically records 1- or 7-day periods.**
- **Remote operation available where required.**

Write for FREE Bulletin 25 which gives a detailed description of the STEVENS Recorder, Type B.

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ENGINEERING NEWS-RECORD

ABP Member ABC

Volume 149 August 21, 1952 No. 8

WALDO G. BOWMAN
Editor

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Every CUMMINS DIESEL *is built not once but twice*

Construction men in the field have learned to count on Cummins Diesels for dependable power day in, day out.

What's behind this consistent reliability? One good reason is the fact that every Cummins Diesel is actually built *twice*. After initial assembly, and run-in testing, every engine is disassembled, inspected; then reassembled and tested again.

This extra care—together with Cummins' economy-proved fuel system and efficient parts and service organization—makes lightweight, high-speed (50-550 h.p.) Cummins Diesels a wise first choice *for men who depend on power*.

Whatever your power needs . . . whether it's for earthmoving, portable power units or generator sets . . . or any other important jobs . . . your Cummins dealer is the man to see.

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CUMMINS DIESEL

TRADEMARK REG. U. S. PAT. OFF.

Leaders in lightweight, high-speed diesel power!

"Specs" can't begin to tell the story —we invite you to

See the model D

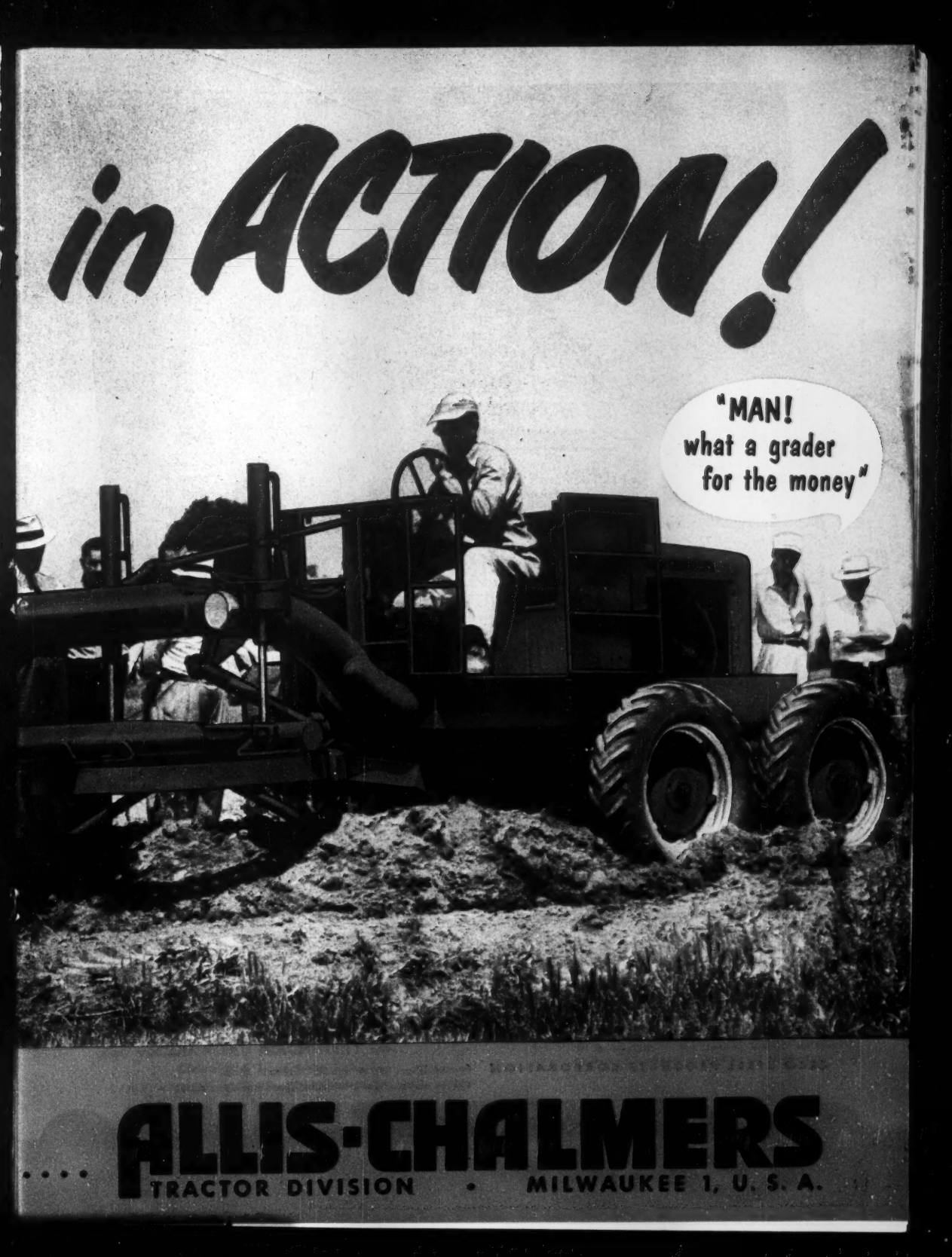
Only by watching the Model D *at work* will you believe that a grader costing so little can do so much . . . and that's just what your Allis-Chalmers dealer wants you to do. *See* how tandem drive design with engine over the drive wheels helps the "D" do a better job of both construction and maintenance. Look closely at how that tubular frame absorbs shocks . . . and how the ROLL-AWAY moldboard enables it to move bigger windrows . . . cut cleaner ditches . . . maintain more miles per day.

Yes, even if you've always been a heavy-grader man, you owe it to yourself to see the Model D. It's *all grader* . . . handles *all* jobs on *some* projects, *some* jobs on *all* projects. So let your nearby Allis-Chalmers dealer give you a working demonstration *soon*.

ROLL-AWAY is an Allis-Chalmers trademark.

- ★ **34.7 horsepower**
- ★ **8,500 lb.**
- ★ **Four speeds forward to 25.6 mph.**
- ★ **Reverse—3.3 mph.**

THE NEWEST, FINEST LINE ON EARTH!



ALLIS-CHALMERS

TRACTOR DIVISION • MILWAUKEE 1, U. S. A.

Perkins & Will, Architects • J. E. Lovejoy & Co., Contractors

How to borrow a sunbeam ...to better daylight schools

Borrowing a sunbeam to daylight a school is a very neat trick if you can do it.

And that's just what Perkins & Will, architects did in designing the Keokuk, Iowa High School. Ceco steel windows played a big part in this unique method of daylighting for better vision.

Functional use of daylight was achieved through window arrangement and purposeful positioning of the building. Built side by side, corridors and classrooms all have outside exposures. Classrooms face north utilizing diffused indirect north light. Corridors take the shape of window walls from floor to ceiling with a southern view and on one side open strips at the top of the inner walls of classrooms admit "borrowed light" from the corridor areas. Corridors become pleasing sun-lit passageways strikingly different from the dark tunnels so prevalent in central corridored schools.

Ceco Architectural Projected Windows were selected because their slender muntins mean more light gets in, more view, too. They won't rot, warp, stick or swell . . . provide controlled ventilation. Cost? Lowest of all installed with generous savings in maintenance.

Ceco's network of multiple offices offered a plus value. Liaison contact with the contractor J. E. Lovejoy & Co. came from Des Moines. In St. Louis windows were adapted to architectural design . . . Chicago adds erection work and drawing of window detail.

Today more and more architects, contractors and engineers depend more and more on Ceco in solving their building problems.

CECO STEEL

CECO STEEL PRODUCTS CORPORATION

General Offices: 5601 W. 26th St., Chicago 50, Illinois
Offices, warehouses and fabricating plants in principal cities

In construction products **CECO ENGINEERING** *makes the big difference*

"Eucs" are Steady Workers!

BECAUSE they're designed and built exclusively for heavy off-the-highway service, "Eucs" can take the toughest jobs in stride. Euclids are steady workers ... they've earned their reputation for job availability and profitable performance on a wide range of work. On long hauls or short hauls, large jobs or small, Euclids move big loads faster and at lower cost.

For moving earth, ore, rock, or coal ... for construction of dams, levees, airports, and highways ... for mine, quarry or industrial work, Euclids have the speed and capacity to cut your hauling costs.

Put "Eucs" on the job and be on more jobs. Learn why users say that Euclids actually cost less to own per ton or yard moved than any other off-the-highway hauling equipment. Your Euclid Distributor has the facts and figures.

The EUCLID ROAD MACHINERY Co.
Cleveland 17, Ohio
CABLE ADDRESS: YUKLID—CODE: BENTLEY

Bottom-Dump Euclids have struck capacities of 13 to 25 cu. yds.... diesel engines of 190 to 300 h.p.... top speeds loaded up to 34.4 m.p.h.

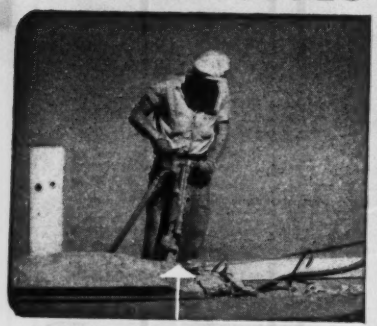
Rear-Dump "Eucs" range in capacity from 10 to 34 tons ... top speeds loaded up to 36.3 m.p.h.... diesel engines of 125 to 400 h.p.

EUCLIDS

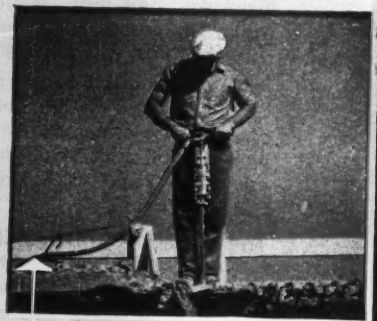
LE ROI

Air

LE ROI GIVES YOU MORE FOR YOUR MONEY!



Le Roi-CLEVELAND Breakers and Spades pack plenty of punch for speedy work in the hardest concrete or stiffest clay. Protective air-cushion in front end assures long life. Well balanced for easy handling. That's why operators like them — do more work with them. Sizes, 18 to 80 lbs.



Le Roi-CLEVELAND Sinkers have strong rotation, powerful blow from snappy valve action. Drill more inches per minute. Easy to hold, kickback is reduced. Operators get less tired, drill more feet per shift. Sizes, 17 to 82 lbs., including the popular H10 and H111.

Pair gets more done—costs less to own

A team you can't beat!

Le Roi AIRMASTER Compressor and Le Roi-CLEVELAND Air Tools

YOU'RE money ahead, when you hook up Le Roi-CLEVELAND Air Tools to a Le Roi Airmaster Compressor. They *work together*, to put more profits in your pockets!

You can't beat an Airmaster, when it comes to producing air at low cost. Super-finished, cushioned valves help your Airmaster deliver air efficiently and dependably — and maintain higher average working pressures. Slow operating speeds and conservative rating provide protection against on-the-job failure, reduce wear-and-tear.

Le Roi-CLEVELAND Air Tools include paving breakers, hand-held drills, wagon drills, drifters, spades, and backfill tampers. Their exclusive valve action keeps air consumption low. They're built to take it, too.

That's why you see Le Roi Airmaster—Le Roi-CLEVELAND teams at work on so many jobs in so many different places!

Have your nearest Le Roi distributor show you a team in action. Call on him now. Write for bulletins.

Compressors
Tractair
Rock Drills
Engines

LE ROI COMPANY MILWAUKEE 14, WIS.
Plants: MILWAUKEE • CLEVELAND • GREENWICH, OHIO

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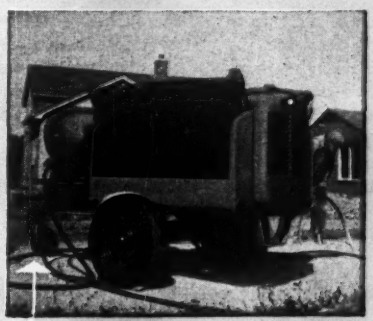
MORE AIR POWER! MORE FOOTAGE! MORE PROFITS!

Le Roi-CLEVELAND Wagon Drills put your deep holes where you want them for better breakage, lower costs. Drill at any angle. 4" bore, powerful force of blow, strong rotation, thorough hole-cleaning action. Higher drilling speed with big bits. For shallow holes, the lightweight DR34 unit is your best bet.



Le Roi Airmasters have 10% to 30% lower piston speed—for less wear, longer life, lower fuel consumption. Heavy-duty Airmaster engine is designed especially for compressor service — it is not just an automotive unit slowed down. Airmasters stay on the job longer, produce more air for less. Sizes, 60 to 600 cfm.

Tractair is a combination tractor-105 cfm compressor that can be equipped with a wide variety of attachments. Does the work of specialized equipment — breaking, drilling, digging, tamping, loading, lifting, backfilling, snow-plowing, etc. Saves you money on initial investment and on job costs.

BARBER-GREENE HEAVY DUTY DITCHER

MODEL 44-C VERTICAL BOOM DITCHER

for lowest cost per foot of trench in all weather

SAVE ON JOBS LIKE THESE:

- Highway Widening
- Sewer, Water and Gas Distribution
- Pipe Line Construction
- Airport Drainage
- Uncovering Joints
- Placing Conduit Tile
- Building Foundations
- Farm Tiling
- Grave Digging

DIGS CLEAN... leaves vertical walls . . . square ends . . . eliminates most expensive handwork.

MILLING ACTION... closely spaced buckets pare small increments as a milling machine cuts metal.

OVERLOAD RELEASE... slips when overload occurs . . . automatically re-sets itself . . . no down time for replacing shear bolts, etc.

Only Barber-Greene offers so many proved ditcher advantages to save time and money on all trenching operations. For instance, the Vertical Boom means a compact, easily maneuvered machine: digs straight down, right up to walks, foundations, underground pipes, etc. . . . digs *all* the ditch . . . no expensive handwork required. The Vertical Boom stays *down* — the harder the digging, the harder the buckets hold it down. Cuts trench to 8'-3" depth, 24" wide.

Self-cleaning "kick-out" buckets operate in a vertical plane . . . produce the famous B-G milling action that cuts through coral, frozen ground, caliche and other formations that completely stop other ditchers.

Another time- and money-saving feature is the exclusive B-G overload release that slips on overload and automatically resets itself until the obstruction is removed or the operator stops machine—and then it re-sets itself for continued operation, protecting machine, hidden mains, cables, etc.

Plan to put the advantages of the B-G Model 44-C to work for you.

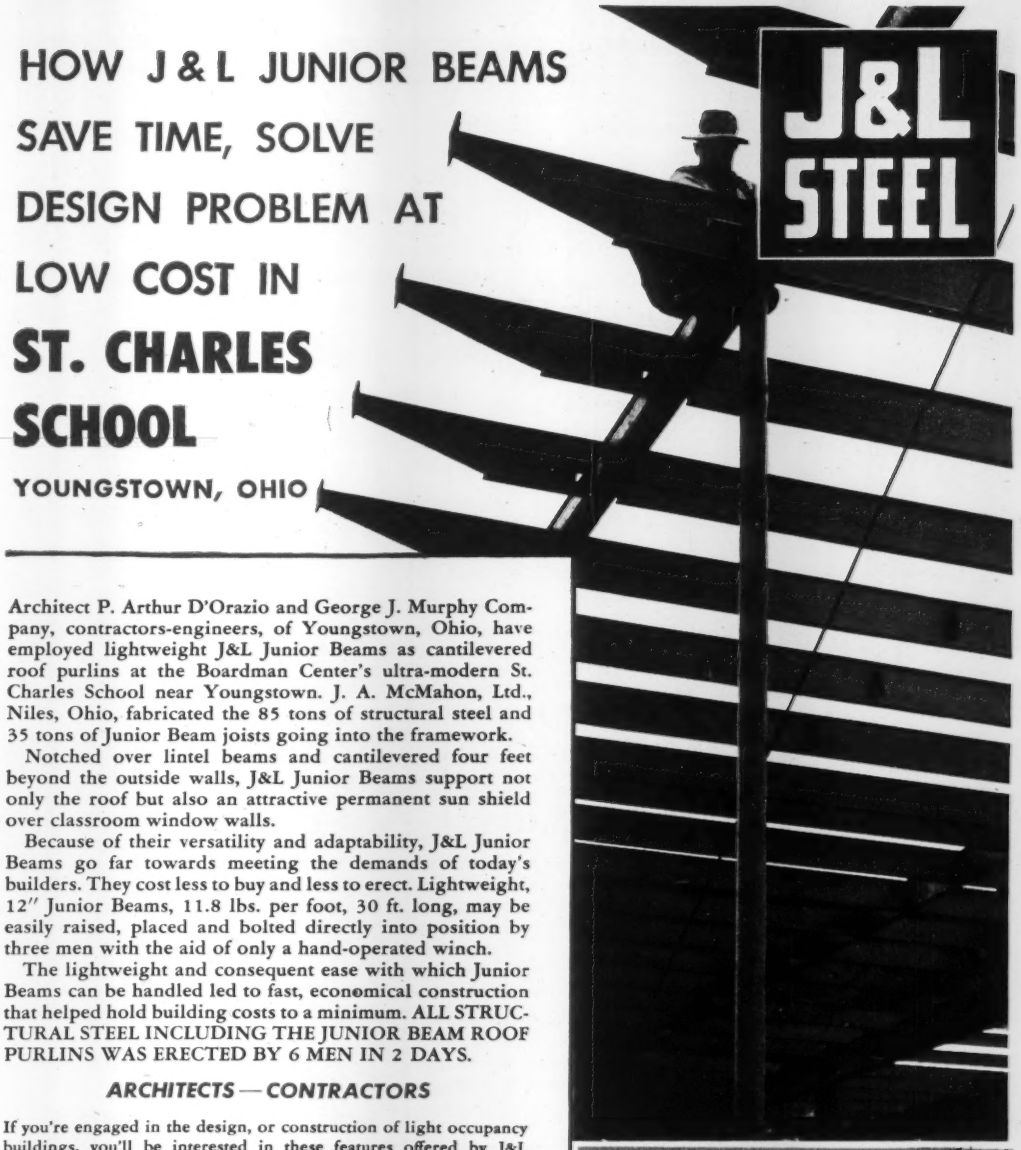
Barber-Greene

AURORA, ILLINOIS, U.S.A.

HOW J & L JUNIOR BEAMS SAVE TIME, SOLVE DESIGN PROBLEM AT LOW COST IN

ST. CHARLES SCHOOL

YOUNGSTOWN, OHIO



Architect P. Arthur D'Orazio and George J. Murphy Company, contractors-engineers, of Youngstown, Ohio, have employed lightweight J&L Junior Beams as cantilevered roof purlins at the Boardman Center's ultra-modern St. Charles School near Youngstown. J. A. McMahon, Ltd., Niles, Ohio, fabricated the 85 tons of structural steel and 35 tons of Junior Beam joists going into the framework.

Notched over lintel beams and cantilevered four feet beyond the outside walls, J&L Junior Beams support not only the roof but also an attractive permanent sun shield over classroom window walls.

Because of their versatility and adaptability, J&L Junior Beams go far towards meeting the demands of today's builders. They cost less to buy and less to erect. Lightweight, 12″ Junior Beams, 11.8 lbs. per foot, 30 ft. long, may be easily raised, placed and bolted directly into position by three men with the aid of only a hand-operated winch.

The lightweight and consequent ease with which Junior Beams can be handled led to fast, economical construction that helped hold building costs to a minimum. ALL STRUCTURAL STEEL INCLUDING THE JUNIOR BEAM ROOF PURLINS WAS ERECTED BY 6 MEN IN 2 DAYS.

ARCHITECTS — CONTRACTORS

If you're engaged in the design, or construction of light occupancy buildings, you'll be interested in these features offered by J&L Junior Beams. EASY TO INSTALL, RIGID, VIBRATION RESISTANT, SHRINK PROOF, LOWEST DEFLECTION FACTOR OF ANY STRUCTURAL SECTION OF EQUIVALENT WEIGHT.

Why not write today for our new booklet: "Skyscraper Construction for Every Building"? It shows how Junior Beams are used as floor joists, and roof purlins with loading and spacing tables for various spans.

JONES & LAUGHLIN STEEL CORPORATION
PITTSBURGH 30, PA.

Jones & Laughlin Steel Corporation
401 Gateway Center Building No. 3
Pittsburgh 30, Pa.

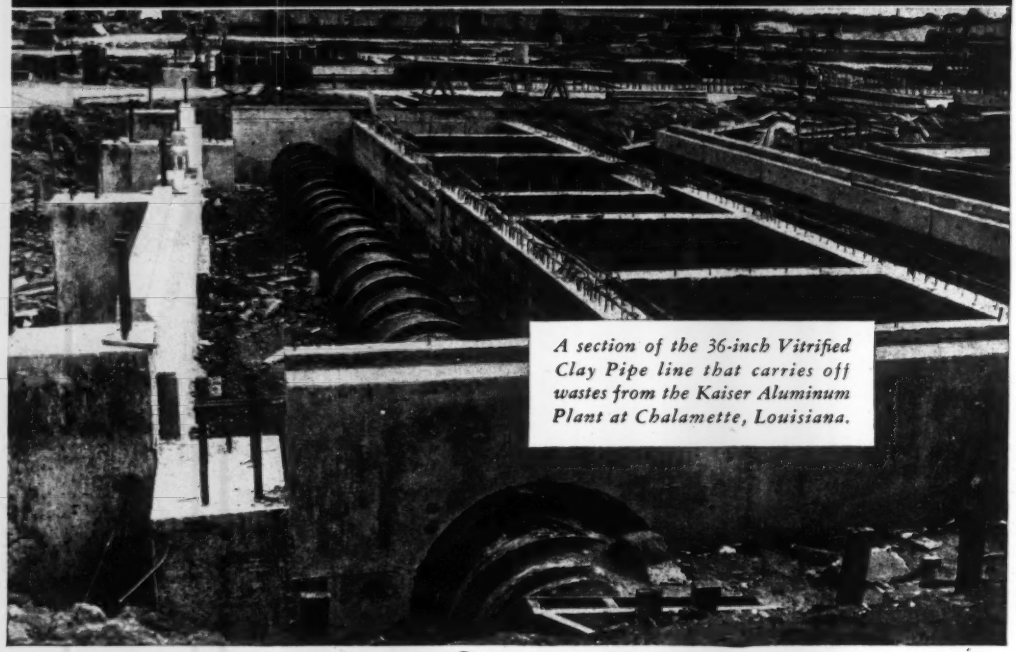
Please send me a copy of the booklet entitled, "Skyscraper Construction for Every Building."

Name_____

Company_____

Address_____

CLAY PIPE—*ESSENTIAL • ECONOMICAL • EVERLASTING*



A section of the 36-inch Vitrified Clay Pipe line that carries off wastes from the Kaiser Aluminum Plant at Chalamette, Louisiana.

HUGE *Vitrified Clay* SEWERAGE SYSTEM serves the New Kaiser Aluminum Plant

KAISER Aluminum and Chemical Corporation's new plant has started to add to the nation's critical supply of basic aluminum. By the end of 1953, the multi-million dollar plant will be producing 200,000 tons of the vitally-needed metal annually.

Industrial wastes, high in fluorine and hydrochloric acid content, are reliably handled by an 11,500 ft. system of Vitrified Clay Pipe.

In *every* city where industrial wastes flow into municipal sewers, Vitrified Clay Pipe is the *one* chemically inert material you can count on for unfailing service. Acids and alkalies can't affect it — today or fifty years from now. *It never wears out.*

NATIONAL CLAY PIPE MANUFACTURERS, INC.

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703 Ninth & Hill Bldg., Los Angeles 15, Calif.
100 N. LaSalle St., Rm. 2100, Chicago 2, Ill.
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Wherever Reliable Performance-Proved Pipe Is Needed, Specifications Call for Vitrified Clay

Orlando, Fla. (Air Force Base)	74,000 ft.
Morrisville, Pa. (New Steel Defense Plant)	300,000 ft.
Rapid City, S. D. (Air Force Base)	54,000 ft.
Tucson, Ariz. (Air Force Base)	440,000 ft.
Panama City, Fla. (Municipal Expansion)	450,000 ft.
Limestone, Maine (Air Force Base)	65,000 ft.
Rantoul, Ill. (Chanute Field)	158,000 ft.
Bakersfield, Calif. (Municipal Expansion)	313,000 ft.

Vitrified
CLAY
CLAY PIPE NEVER WEARS OUT!
PIPE

C-852-2

GULF PRODUCTS *and* FINE SERVICE

keep equipment rolling

on Philadelphia Expressway Project

Ralph Myers Contracting Corporation, Salem, Indiana, has a subcontract for work on the Philadelphia Expressway between West Conshohocken and Gladwynne, Pa. This expressway will link Philadelphia with the Pennsylvania Turnpike. 1,300,000 cu. yd. of dirt removal is involved in the Ralph Myers section of 4.5 miles.

ASK a leading contractor like Ralph Myers Contracting Corporation why they use Gulf lubricants and fuels and you'll get an answer something like this, "We feel that our equipment gains an edge in performance with Gulf products — their extra quality is reflected in smoother, more dependable operation, and lower maintenance costs.

"Then Gulf provides a high type of engineering service to help us make sure that the most suitable lubricants and fuels are used for every unit and operating condition. And we appreciate Gulf's prompt delivery service."

On all types of construction projects, Gulf products and fine service work as a team to help contractors do a speedier, more profitable job. Let us discuss with you how they can help you on *your* next job. Write, wire, or phone your nearest Gulf office.

GULF

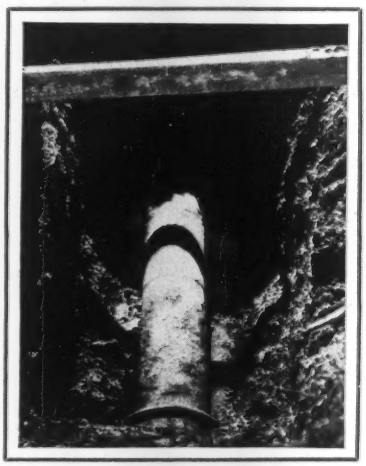
Giving the taxpayer

Full measure and running over! When a community buys cast iron pipe for its water mains the taxpayer gets his money's worth—*"full measure, pressed down and running over."* His tax dollars are not gambled with to pay for shorter-lived pipe which sooner or later will have to be replaced.

Leading waterworks engineers estimate the useful life of cast iron pipe at *4 to 5 times* the average term of a water revenue bond issue. They base their estimates on the fact that over 35 American cities have cast iron mains in service that were laid more than 100 years ago—and the list increases each year as cities grow older.

Moreover, a survey backed by three Waterworks Associations shows that 96% of all six-inch and larger cast iron pipe *ever laid* in 25 representative cities is still in service.

Yes, cast iron mains not only give the taxpayer his money's worth but, by serving for generations after the bonds issued to pay for them have been paid-up and forgotten, cast iron mains have saved, and are saving, many millions of tax dollars.



This cast iron water main installed in Alexandria, Virginia, 100 years ago is still rendering satisfactory service. Over 35 other American cities have century-old cast iron mains in service.

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America's No.1 Tax Saver

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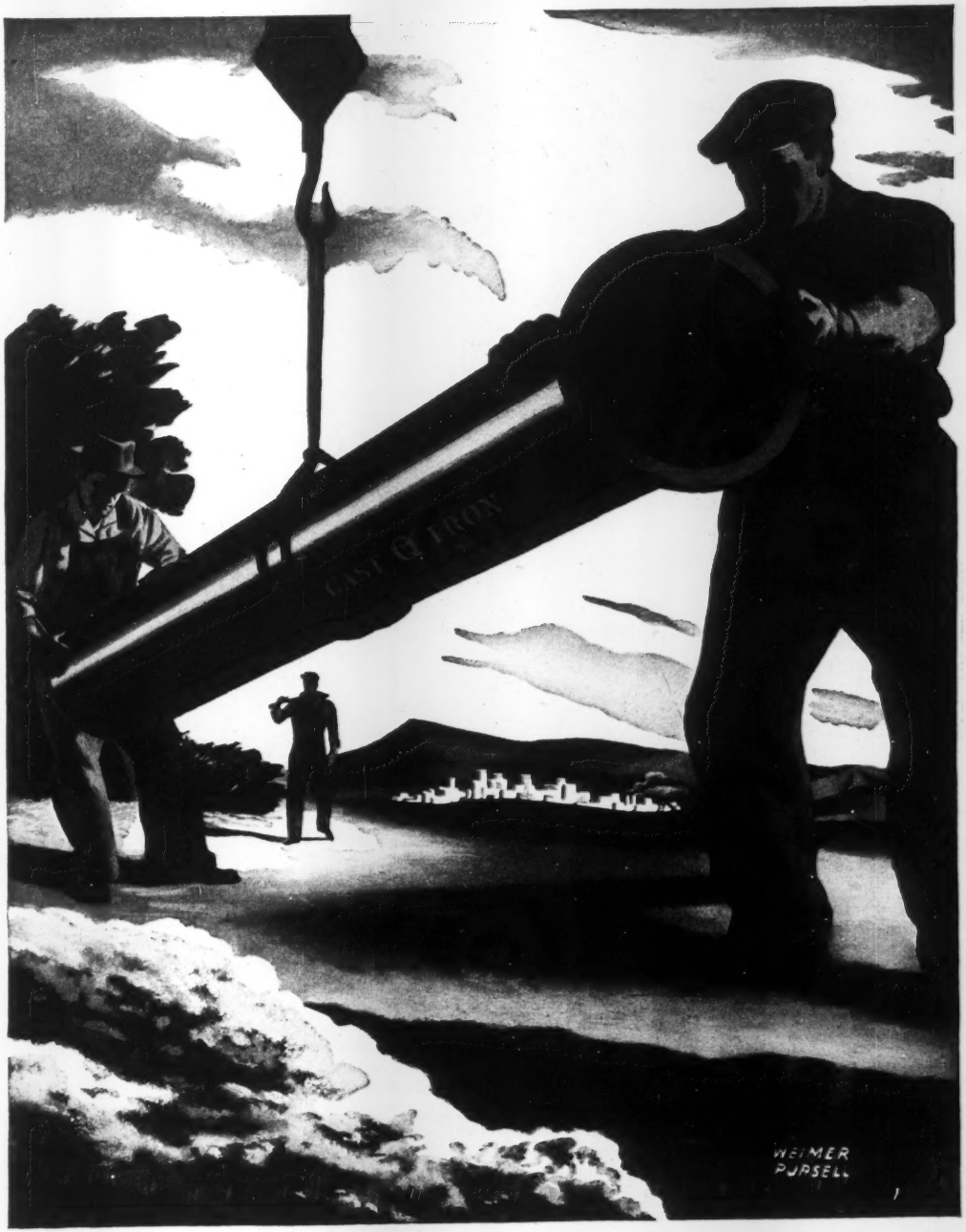
his money's worth—



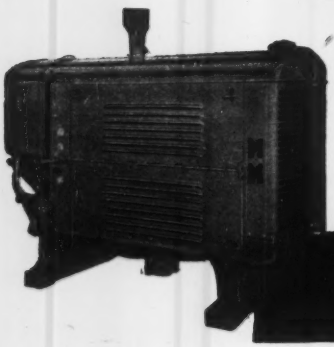
LOADS OF OVER 25 TONS LIFTED HIGH AND DRY

THIS MM MINNEAPOLIS-MOLINE MODERN MACHINERY *Powered*

AMERICAN CRANE

Helped Omaha Roll with the Punch!

* **MM 403-4A**
POWER UNITS DELIVER "AROUND-THE-CLOCK" DEPENDABILITY ON AMERICAN MODEL 375 TRUCK CRANES



Ol' Man River's Punch was met with preparedness when flood threatened devastation to Omaha's industrial area. The city's disaster committee made arrangements for moving of equipment to minimize loss. MM powered American Cranes were called into service and "not a single American Crane, working around the clock, had to stop or slow down for any reason."

Manufacturers of heavy equipment know that the success of their unit often depends on the power unit. That's why more and more of them select MM economical, low-speed, high-torque power units of proved dependability. Can you afford to settle for less?

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COMMERCIAL BUILDING—ON THE RISE

Commercial building is due for a pickup. The volume of construction won't rise enough next year to make up for the drop that's coming in industrial construction. But in the long run—over the next four or five years—commercial building is likely to pass industrial work in volume by enough to keep private non-residential running at very high levels.

Commercial building has been hit harder by the defense program than any other type of construction. Builders not only had to put up with rigid limitations on materials and the outright banning of some kinds of "nonessential" work, they also were hit hard by Regulation "X". And even the excess profits tax cuts into commercial construction. As a result, commercial buildings put in place this year will only amount to about $1 billion, down about 30% from the level of 1951.

The excess profits tax—which does not bother most types of building is especially tough on commercial buildings as long as Regulation "X" is in effect. Commercial structures are ordinarily financed with at least 90% borrowed money. That way, they have a big tax credit to apply against excess profits taxes. But Regulation "X" limits borrowing to 50% of a structure's cost. The result is that owners have to pay excess profits taxes on a substantially larger part of their earnings.

• **Stretchout**—This financial squeeze play has done as much to cut commercial building as shortages and materials controls did. And it doesn't just cut work this year, but next year as well. That's because potential builders have been delaying their planning and land acquisition, waiting for either Regulation "X" or the excess profits tax to be lifted. It will take many months for these plans to get into operation once builders decide to go ahead. So the expected upswing in commercial building will be held down—or at least stretched out—as a result.

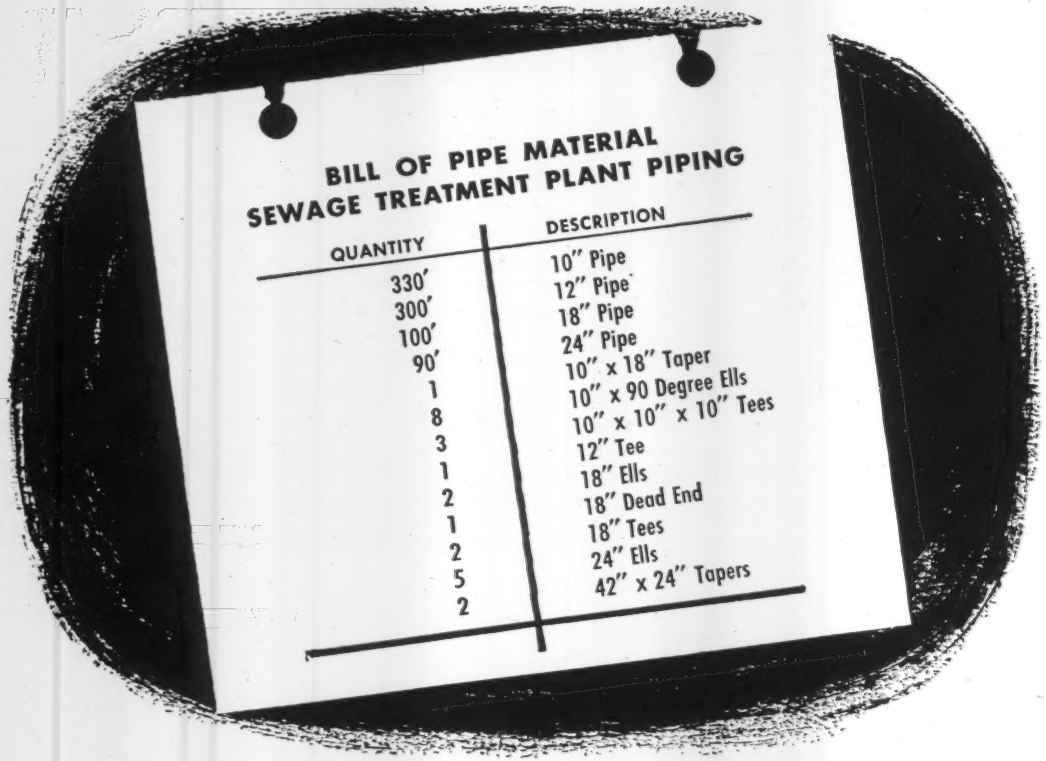
But there's no doubt about the need for stores, office buildings and other commercial facilities; it is huge. The United States has fallen far short in keeping up with requirements for these buildings since the war. Needs for stores to serve rapidly growing surburban areas are especially big.

Construction of stores, restaurants and similar structures usually booms when retail sales and residential building are booming. Yet this type of building has not really boomed—although it's done pretty well. In the six years since the war, the U. S. put up about 60% less of these structures than in the six years at the end of the 'Twenties.

Construction of office space and related structures is also far behind needs. Only a few large office buildings have been put up since the war, and they are concentrated in a few large cities. U. S. construction of warehouses, office and loft buildings was lower in 1951—the peak postwar year—than in any year between 1921 and 1932.

• **The outlook**—The controls and taxes that held commercial work back are still in effect. But there's a good chance that some or all of them will die within the next year. Materials won't be much of a problem after the first of next year. Regulation "X" is on its last legs now. And the excess profits tax is due to expire on June 30, 1953. There's a good chance that Congress will let it die then.

Commercial work is expected to rise steadily for several years. Volume of work put in place should be about $1 billion this year. It is expected to rise to $1.2 billion or more in 1953. And if general business stays good, it could get as high as $1.8 billion by 1955. That's much more than industrial construction is expected to be that year; so commercial building is well on its way to becoming the biggest part of private non-residential building.



City saves 60% on cost of piping for treatment plant

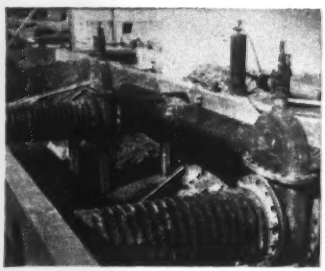
When a northwest city had to enlarge its sewage treatment plant the installed cost of the type of pipe originally considered far exceeded the engineer's estimate. Then they found that by using Armco ASBESTOS-BONDED Pipe they could do an equally good job for 60% less than the original bid.

On every item in the bill of materials, Armco ASBESTOS-BONDED Sewer Pipe with a PAVED-INVERT was much lower on an installed cost per foot or per unit. Savings ranged from a minimum of 28% to an astounding 93%!

Armco ASBESTOS-BONDED Pipe provides complete protection against severely corrosive conditions. The PAVED-INVERT guards against erosion. Thus you can use Armco Sewer Pipe with confidence that it will solve your most "difficult" corrosion or erosion problems.

For normal conditions plain galvanized standard pipe will provide long service or you can have the extra protection of bituminous coating. Armco MULTI-PLATE Pipe or Arch extends the advantages of corrugated metal design to larger structures. And either Standard or MULTI-PLATE Pipe-Arch will solve problems of limited headroom. For more details, write us. Armco Drainage & Metal Products, Inc., 4062 Curtis Street, Middletown, Ohio. Subsidiary of Armco Steel Corporation.

EXPORT: THE ARMCO INTERNATIONAL CORPORATION



Partly installed Armco ASBESTOS-BONDED Sewer Pipe, showing entrance of two 18″ lines to final clarifier.

ARMCO DRAINAGE STRUCTURES

ARMCO

- **For amusement only**—The ban on construction of amusement structures will be lifted January 1 (if nothing else interferes with metal supplies)—but controls officials are being cagy about making a formal announcement.

  Reason: Raising this restriction would be removing the last outright ban on any type of construction. And controllers think such an announcement, right now, would have a bad impression on other users of steel who will be under reduced allotments for the rest of this year.

  There's good reason for caution. Last spring word got out that the amusement ban would be dropped this July (a move blocked by the steel strike). But a lot of metal users figured the announcement meant controls were no longer needed—and violations increased. The controllers figure they couldn't have much success in the next couple of months of tight steel supply, if users get the idea again there's ample metal for everyone.

- **No more restrictions**—On the matter of controls, one rumor was killed with a definite statement: There will be no further bans on any type of construction.

  The rumor had it that NPA would bring some types of buildings other than recreational under its prohibited list in the last quarter of this year. Rumor-killer was Henry H. Fowler, NPA Administrator.

- **Housing stays down**—One other fact appeared about housing: Starts for July, said the Bureau of Labor Statistics, were 104,000 units.

  That was the second month in a row when starts fell below the rate needed to hit 1.2 million for the year (June showed 106,000). August is expected to fall in the same class.

  And one more month of that kind will kill Regulation X, since Congress has decreed that when starts fall below the 1.2 million rate, credit restrictions (down payments in this case) must be lifted.

- **Steel mushrooms**—Solid evidence of what steel wages and price rises will mean in the way of mushrooming prices for construction is included in an 8-4 Wage Stabilization Board vote authorizing raises in fabrication wages.

  Such action would affect about one million fabrication workers—and they're aiming at the same 16-cent-an-hour boost the basic steelworkers got (though not all of them will get that much). WSB's vote will make for quick action, since local boards won't have to refer their rulings to Washington.

  Officially, the move is simply a means of saying the government will approve such increases, "if management and labor agree." Actually, of course, it's an order to agree on those terms. Fringes are not included in the order.

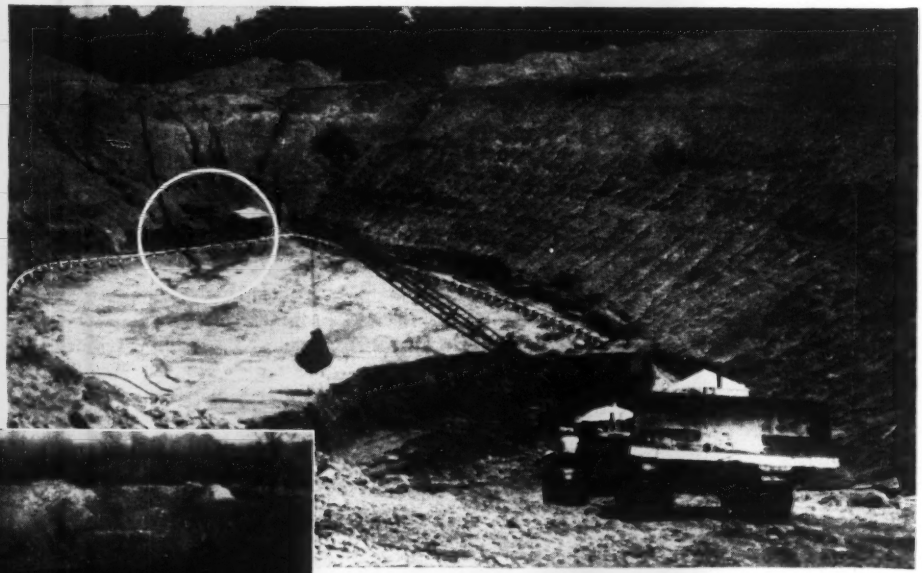
  Just how much of the 16 cents would be passed on to construction remains to be seen—but it'll certainly be on top of whatever basic steel itself will pass along.

  Negotiations are already under way with some 75 fabricators—long custom puts new fabricating contracts on the heels of new basic steel adjustments.

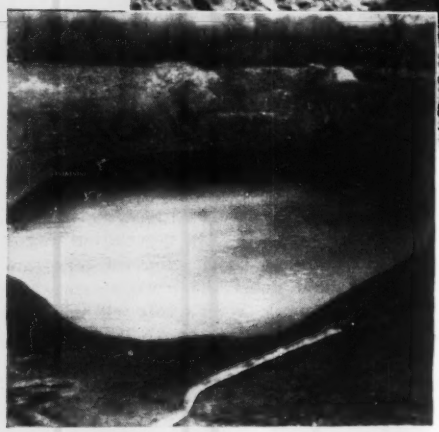
- **And steel dollars**—And if anything further was needed to rivet down the cost picture, OPS approval of new steel boosts did it: steelmakers were allowed increases of from $4 a ton (for structural shapes) to $31 a ton (for wire rope).

  The range is big—and almost all of it hits into construction market (see p. 92).

STANG DEWATERS 65′ DEEP 300′ x 400′ EXCAVATION FOR LIMESTONE MINE



Digging dry river sand predrained by Stang Wellpoints.



Above—Flooded excavation of shaft for limestone mine, prior to installation of Sand Piles and Stang Wellpoints.

After heavy rain and snow, the banks of a 300′ x 400′ excavation, 56′ deep, for the Mississippi Lime Company, became unstable as the groundwater table rose. Stang engineers recommended sand piles to drain water vertically down to the 20′ layer of river sand lying just above the limestone. When the upper banks had been successfully stabilized, Stang Wellpoints were installed on top of the river sand, speedily dewatering it so that final excavation could proceed in the dry. Specially designed "shorty" wellpoints were used for this job.

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AEC PROJECT HEADS—Top men of the new atomic energy project at an informal meeting last week are: (left to right) Robert E. Rose, assistant manager of the new project for AEC; Gordon Molesworth, Oak Ridge manager; Kenneth Dunbar, new project manager for AEC; and George Holling, general manager for Peter Kiewit Sons' Co., the contractor. (Wide World Photo.)

AEC launches crucial phase of atomic energy expansion

On Sept. 23, 1949, President Truman announced that Soviet Russia knew the secret of producing an atomic explosion. Until that time, the atomic energy projects at Oak Ridge, Tenn., and Hanford, Wash., built during World War II, appeared to give the U.S. a safe margin of supremacy in arms.

Truman's announcement touched off one of the greatest construction races in the history of the world.

Quickly the Atomic Energy Commission pushed to completion its plans for new atomic energy producing plants at Savannah River, Ga., and Paducah, Ky. Before the end of 1950, construction was progressing feverishly at both projects.

Last week the AEC announced its fifth major project will be a $1.2-billion plant located on 6,500 sparsely populated acres in Pike County, Ohio. (See map on next page.) To be known as the "Portsmouth project," it is the largest single expansion the AEC has announced to date.

Similar to Oak Ridge but larger, the new plant will produce uranium 235—the basic substance for atomic energy—from the mineral in its raw form. AEC made no effort to conceal the urgency of the project. It said portions of the plant will be placed in operation on completion, while other portions are still under construction.

Though construction schedules show it will take about four years to complete, the plant is a critical part in AEC's new program to step up production of atomic weapons by four to five years. Some of its units may be producing by 1954.

Size of the undertaking is shown in a few brief statistics. Average construction employment on the project will be about 17,000 and at the peak, about 34,000 workers will be employed. The plant will require the power output from 400,000 kw of generators in existing plants, plus power from two new plants that will increase the capacity to 1.8 million.

Construction is expected to start in about six weeks. Scores of engineers are busily making surveys and test borings at the new site.

Fifteen public utility companies are planning to construct two new power plants to supply the AEC project, at a cost estimated between $350 million and $400 million. Their location has not been determined, but one probably will be in Ohio and the other may be established across the Ohio River either in West Virginia or Kentucky.

• **Selects team**—To undertake the huge responsibility of building the key project in the country's race against time, the AEC picked a team of blue chip construction and engineering firms. As principal construction contractor, it named Peter Kiewit Sons' Co., of Omaha, Neb.

Here are the engineering and design contracts:

• Stone & Wester did the site survey.
• Union Carbide & Carbon is responsible for general planning and development of design criteria.
• Giffels & Vallet have design of process facilities and other related facilities.
• Sargent & Lundy—part of design of electrical facilities.
• Singmaster & Breyer—design of feed plant.
• Smith, Hinchman & Grylls—design of utility work.
• Burns & McDonnel—power plant.
• Holabird and Root and Burgee—administration building, office building and supporting facilities.

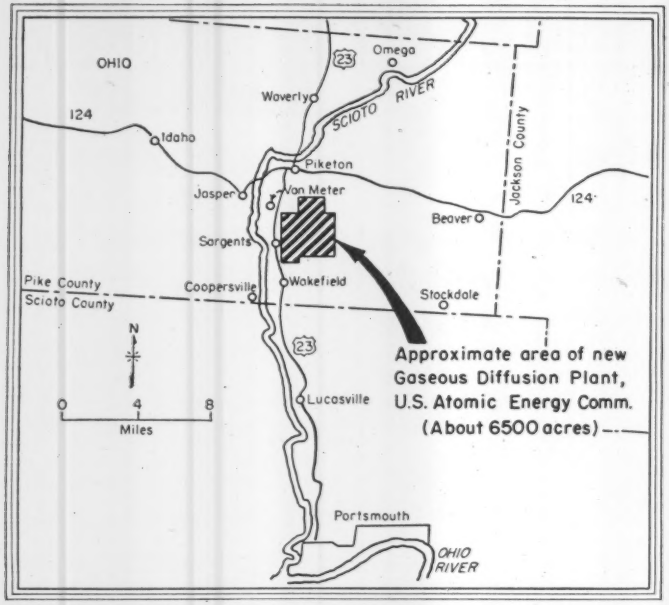
As at Savannah River, AEC expects that a substantial part of the Ohio work will be done under competitive bid and unit price subcontracts handled by Kiewit and the AEC.

Direct supervision of the construction and operation of the new plant will be under a new Portsmouth area office, set up by the Oak Ridge operations office of the AEC. Kenneth A. Dunbar is the new area manager; R. H. McCulloh, new deputy area manager. Under their direction, construction will begin as soon as the U.S. Army Corps of Engineers can acquire the property.

• **Boom ahead**—Selection of the Pike County site climaxed months of surveys and studies through the Ohio valley area to find a location where electric power and water were in adequate supply to meet atomic production demands. Until last week, the final decision had been a tightly guarded secret.

AEC's announcement stunned Pike County's 14,607 residents who have been making a quiet living out of farming corn, wheat, oats, and dairy products. And it alarmed people in the adjoining Scioto County, whose County Seat, Portsmouth is the largest city in close proximity (22 mi) to the site.

Approximately 50 families in the plant-site area will have to be resettled. But the impact of the construc-



AREA OF THE NEW PLANT is 22 mi north of Portsmouth, and 80 mi east of Cincinnati, Ohio.

tion boom that is coming will affect scores of rural communities up and down the Scioto River valley. At peak employment, the number of construction workers on the project will be double the present population of Pike County.

As has been the case in all new AEC installation in the past two years, including Savannah River and Paducah, there will be no AEC-built and operated community like the one at Oak Ridge. AEC is leaving the housing problem to private firms, and estimates that about one out of every five workers will live in a trailer.

Immediately following announcement of the site, Peter Kiewit Sons' Co. disclosed plans to build housing and community facilities for construction workers.

• **Kiewit saga**—When the AEC selected Peter Kiewit Sons' Co. as the prime contractor for one of the largest single construction contracts ever let, it picked a seasoned veteran organization with many a herculean project under its belt.

Kiewit's selection came after two preliminary rounds in which eleven and then a narrowed down field of three firms was screened for the job. AEC's action was a recognition of the firm for what it is—a tough-minded and cost-conscious outfit; one that has kept nimble as it grew big.

The Kiewit firm was started by Peter Kiewit, Sr., in 1875. He had come from Keokuk, Ia., to Omaha, in his youth and had started a brick manufacturing plant. To brick manufacturing, he soon added a masonry construction business, and later this developed into general contracting.

When Peter Kiewit, Sr., died in 1914, the business continued under the name of Peter Kiewit Sons with Ralph, George and Peter Kiewit, Jr., in charge. The brothers concentrated their business in the Nebraska area. The Nebraska State Capital Tower and the Joslyn Art Museum at Omaha were among their projects.

In 1930, George and Ralph retired, and Peter Kiewit, Jr., became president. Scholarly in appearance, deliberate in speech, retiring in manner, Peter Kiewit, Jr., had come into the firm as a bricklayer, after graduating from high school. He had worked his way up the hard way; the lessons he learned enabled him to plough through the rough depression years.

He went into highway construction, bidding on a falling market, and anticipating that dropping prices would fall below the bids to make them profitable. During a time when many contractors were folding, Kiewit made money and expanded in heavy construction.

Following the depression, Kiewit expanded the firm's regular operations in heavy, highway and building construction. His firm began participating in joint ventures in all types of construction particularly in the western states. During World War II and the years that followed, the firm continued to expand its operations and its work spread out to the South Pacific, to Alaska, to Greenland, and to South America.

Now building such projects as North Dakota's Garrison Dam, the firm also recently put a strip of bituminous cover on South Second Street, in Green River, Wyo. Taking on small projects keeps an organization from getting muscle bound, Kiewit says.

Kiewit mines coal at Sheridan, Wyo., to keep equipment busy in the off season. It also strip-mines iron ore on the Mesabi Iron Range in Minnesota. The current issue of the Kiewit house organ lists 113 jobs going on.

The parent firm has 13 subsidiary corporations scattered across the country and elsewhere. Each has full autonomy, which makes for first-hand supervision and for rapid decisions when they must be made. At the same time, each firm can call on the resources of the whole company or another subsidiary to help keep down costs.

• **The record**—During the 22 years of Kiewit's management, the company increased its financial net worth from approximately $500,000 to over $17 million.

This year the company was carrying on 37 contracts in its own name and was a joint venturer with others in 33 contracts, in most of which the company has an interest of 50% or more. These contracts represent a total contract volume of about $200 mil-

PETER KIEWIT—His firm shoulders AEC's biggest single construction job. (World Herald photo)

Atomic timetable

More than $6 billion has now been committed for construction of five major atomic energy plants under the Atomic Energy Commission. Here are the principal phases of the program to date:

1—In 1943, construction of the secret Manhattan Project began at Oak Ridge, Tenn. Its purpose: to make uranium 235, its basic substance for atomic power, from the mineral in its raw form. Original cost was figured at $915 million. Recently this has been expanded by $464 million, bringing the total to $1.4 billion. Almost simultaneously construction of the $1.2-billion Hanford Plant, Wash., got under way. Its purpose: to manufacture plutonium from natural uranium, also a basic substance for atomic energy.

2—In 1950, the AEC launched construction of its $1.3-billion hydrogen bomb plant at Savannah River, Ga., to produce atomic materials for use in development of a hydrogen bomb and other purposes. Current expansion has increased construction costs to more than $1.4 billion. Almost simultaneously, construction started at the $472-million Paducah, Ky. plant to produce uranium 235 by gaseous diffusion. Recently announced expansions bring the total cost of the operation here to $950 million.

3—In 1952, the AEC announced it will start construction of a $1.2-billion gaseous diffusion plant in Pike County, Ohio, to produce uranium 235.

lion. About 10% of these contracts are building construction, about 30% highway construction, and about 60% heavy engineering.

The new AEC award makes Peter Kiewit Sons' Co. one of the two largest construction firms in the U. S.—the other being Morrison-Knudsen Inc. of Boise, Ia.

George Holling, 20 years with Kiewit and now a director and vice-president of the firm, will be general manager for Kiewit on the new project. He will be assisted by R. H. Lukens, also a vice-president. About 25 key Kiewit men have been at Oak Ridge, Tenn., for the past four weeks working on organization and planning the operation.

Approximately 14,000 engineering drawings will be required for the project.

The plant will have nearly 10 million sq ft of floor space and an undisclosed number of buildings—some one-half mile long. An additional 1 million sq ft of floor space will be included in temporary buildings.

Hanford expansion starts

Less sensational than the announcement of the new project in Ohio, but of major importance, are reports from Hanford, Wash. of a new $100-million atomic energy expansion there.

Kaiser Engineers, division of Henry J. Kaiser Co., last week announced it has set up headquarters at Richland to start work on the job. John H. Tacke, is resident manager for Kaiser. L. H. Oppenheim, assistant general manager for the firm, said preliminary work is already underway at temporary offices located in Building 10 in the North Richland area, and hiring has started. Construction of offices and other service facilities will begin as soon as possible.

According to the AEC, the maximum construction force needed for the Hanford expansion program, including the work to be done by Kaiser, is expected to be approximately 11,000. It will reach its peak late next year or during the first half of 1954.

Kaiser said sub-contracts will be let for certain phases of the work. So far one job has been let: electrical installations are being subcontracted to Foothill Electric Corp. of Oakland, Calif., which has just completed the electrical installation for the expansion of the Kaiser Aluminum reduction plant at Spokane, Wash.

• **Fast rise**—For Kaiser, the new job marked a major new stride in the firm's development. Founded by Henry J. Kaiser, builder and industrialist, Kaiser Engineers have been associated with major engineering and construction projects for the past 30 years. The company currently employs about 7,000 men, including a staff of 800 in the home offices at Oakland.

JOHN H. TACKE, resident manager for Kaiser Engineers, at Hanford.

Kaiser Engineering is now working on projects in Jamaica, Texas, Louisiana, New York, Mississippi, California, Oregon and Washington. It built shipyards at Portland and Vancouver, Washington, and more recently has erected aluminum and cement facilities in Tacoma, Spokane, and Seattle. Once associated with the work at Grand Coulee and Bonneville Dams, Kaiser is now completing construction of Detroit Dam on the Santiam River at Mill City, Oregon.

Labor disputes hurt AEC plant expansion

Production of atomic weapons has been hindered by 12 strikes in the past four months, and all involved construction work.

Five of the stoppages hit the expansion of the Hanford project at Richmond, Wash., by the Atkinson-Jones Construction Co. Three of these stoppages, each lasting two days, involved the same dispute—a jurisdictional conflict between the AFL teamsters and pipefitters over which union's members should load and unload materials on the project.

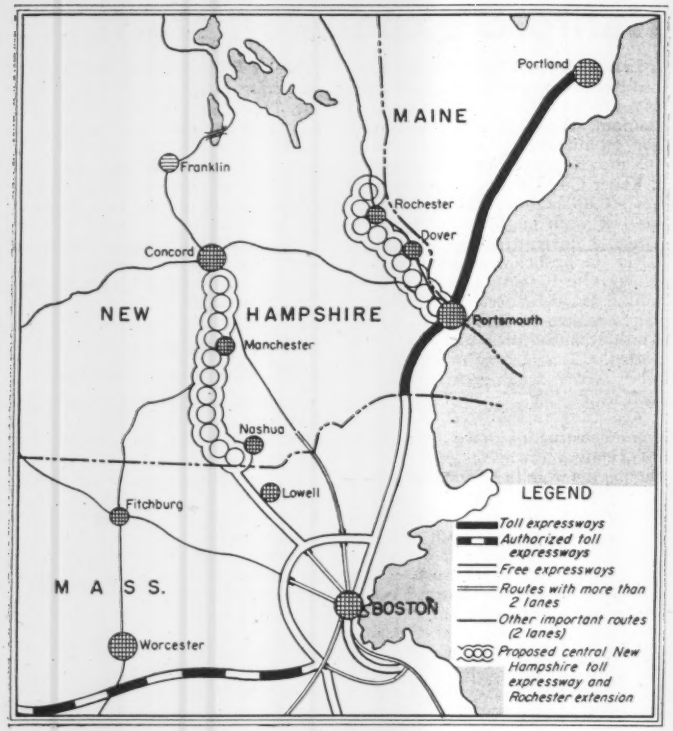
This dispute eventually was decided by the National Joint Board for the settlement of jurisdictional disputes in the construction industry. It rendered a "job decision" dividing the work between the two unions. Like all "job dicisions," it covers only the Hanford project.

Two other stoppages at Hanford involved nine crafts over the question of pay for checkout time, and the sheet metal workers over contract renewal.

• **Elsewhere**—Two more interruptions at Paducah, Ky., raised to 106 the number of work stoppages at this AEC construction site since January, 1951. A dispute over laborers' wages with F. H. McGraw Construction Co. tied up about 20,000 workers (ENR July 17, p. 33). Laborers struck when the Construction Industry Stabilization Commission approved only a 10-cent-an-hour wage increase for unskilled labor.

The contractor later got CISC to make the higher $1.60 scale, retroactive to April 1.

Longest of the stoppages during the period reported by the Bureau of Labor Statistics occurred at the Livermore Research Laboratory project, there AFL carpenters were off the job from the end of March until late May over renewal of an area agreement with Rosendahl Corp. Electricians were out on the same project over a month, respecting the carpenters' picket line.



New toll highways planned

Success in operating its 15-mi toll highway parallel to old U. S. Route 1 along the coast, has encouraged the New Hampshire Public Works and Highway Department to propose toll financing for two more needed highways.

One would start at the Massachusetts line, below Nashua (see map above) and extend north to Manchester and Concord, a distance of about 40 miles. The other would run northwest, from a connection with the present coast toll road at Portsmouth, to Rochester, about 20 miles.

Details of the planned additions to the state's toll highways were announced last week by Frank D. Merrill, head of the department. Gen. Merrill observed that income on the toll highway along the coast is 20% above the estimates of the consultants who made traffic studies for it—Parsons, Brinckerhoff, Hall and Macdonald of New York.

The same firm has been retained to estimate the potential traffic on the proposed new toll roads, and if the results are favorable, Gen. Merrill will recommend immediate action on his plan to the legislature in January.

The proposed new road up the industrialized Merrimack River valley to Concord is estimated to cost $26 million. It would connect with the Massachusetts expressway system and provide badly needed relief for the present two-lane highway, U. S. 3, which carries from 4,000 to 8,000 vehicles per day, and in the cities has a traffic load of 20,000 vehicles.

Resort traffic would be served by the highway from Portsmouth to Rochester, as it would parallel one of the main routes into the White Mountains. It would be an extension of the present toll highway along the coast, which also connects with the express highway net in Massachusetts.

Cost of this road is put at $14 million by the Highway Department's Planning Division, which drew up the new toll highway plans.

Other important highway activities last week included these:

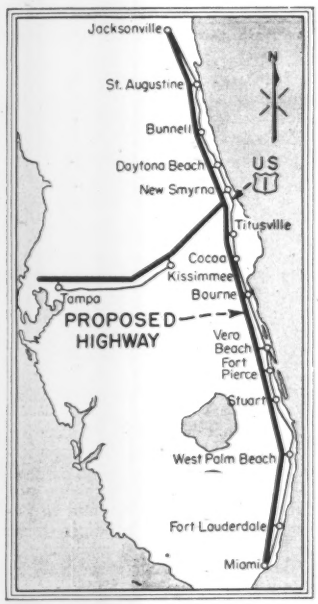
• **Opposition forms**—Plans to fight any immediate moves toward the launching of the proposed $275-million toll highway system in Florida have been mapped by the Florida Free Highways Association.

The group issued a statement condemning recommendations by Parsons, Brinckerhoff, Hall and Macdonald (ENR Aug 7 p. 29) that immediate steps be taken toward financing and construction of a 315-mi toll highway from Jacksonville to Miami, with a 128-mi spur branching off below Daytona Beach cross-state toward Tampa (see map below).

The association's directors notified State Road Board Chairman Alfred McKethan that they would appear with their attorneys as protesting witnesses before the State Road Board. They also directed their attorneys to appear before the State Improvement Commission and the State Board of Administration. They authorized a steering committee to initiate legal action, if necessary, to forestall issuance of bonds to finance the proposed toll highways.

Actual cost of the turnpike system was estimated at $242 million, including rights-of-way. Financing was estimated at $750,000 and interest during construction at $31,750,000.

The engineers recommended a toll of 1.25 cents a mile for passenger cars and a scale ranging from 2 to 7 cents a mile for trucks. On this basis, a passenger car would pay $4 toll between Miami and Jacksonville and heavier trucks and buses would pay $22. The toll for a passenger car between Tampa and St. Petersburg and



Heat gums up test

Workmen were cleaning up several blocks of Chicago streets last week in the final phase of an unhappy paving experiment on busy Michigan Avenue Bridge.

The experiment was a test installation of a recently developed pelletized rubber for surfacing bridge decks and playgrounds (ENR July 10, p. 124). An asphalt emulsion had been sprayed on the asphalt planks of the bridge floor, after which the rubber pellets (about ¼ in. in diameter) were spread over the surface.

The day was hot.

Tires of automobiles passing over the bridge—instead of pressing the pellets tighter to the bridge deck—picked them up (along with gobs of sticky asphalt) and spread them along Michigan Avenue for several blocks. The pellets also were slung by tires and attached themselves to pedestrians, cars and the bridge sidewalls.

Sand was hastily dumped on the deck in an attempt to dry up the mess. Trouble was, the bridge had to be opened for a ship, and when the two bascule leaves were raised the sand became airborne, further harassing pedestrians and motorists.

Chicago officials attributed failure of the experiment to failure of the asphalt emulsion to harden as had been expected by promoters.

But there was one bright side to the story: The sealer appears extremely effective in protecting the bridge surface against rain.

Jacksonville would be $3, and for big trucks, $16.50.

The engineers estimate the turnpike would produce $16,685,024 in revenue the first year. Earnings would increase yearly to $32,818,000. They recommended the project be financed by the Florida State Improvement Commission through issuance of 3½% bonds to be paid off in 30 years.

• **Texas plan**—Governor Alan Shivers has announced that he will recommend that the 1953 Texas legislature create a toll road authority, empowered to finance construction of toll highways through issuance of revenue bonds.

• **Income report**—An income of more than $17 million for the fiscal year ending May 31, has been reported by the Pennsylvania Turnpike Commission. Nearly 60% of the total toll revenue came from trucks, although passenger cars made up 80% of the traffic.

The commission predicted that on the basis of present traffic, its 1952-53 fiscal year income will reach $20 million.

During the year covered by the report 7,061,850 passenger cars paid tolls amounting to $6,608,385, and 1,730,417 trucks and buses produced $9,484,003 in revenue. Nearly 7% of the total income—$1,022,047—came from the food and fuel concessions.

Amortization cost of the turnpike's $211,500,000 in outstanding bonds this year is $6,508,750, while operating and maintenance costs are approximately $2,770,000.

During the month of July this year, the turnpike reported the biggest traffic boom in its history—the vehicle count was 1,214,563 and the gross revenue, $2 million.

• **Toll bridge authorized**—The Carolina-Virginia Coastal Highway Corp. of North Carolina has had its charter amended to permit it to build a toll bridge across Croatan Sound between Maun's Harbor and Roanoke Island, south of Kitty Hawk. There is a free ferry there now requiring 30 min for the crossing.

The Coastal Highway Corp. was set up by North Carolina to join with a similar agency in Virginia in building a toll highway between Kitty Hawk and Virginia Beach, but has been unable to finance the project (ENR June 19, p. 24). There is a state highway from Kitty Hawk to the ferry over Croatan Sound.

• **Tunnel sought**—Following rejection of the plan to use Moffat Tunnel as an all-weather road link joining communities on the Continental Divide (ENR Aug 7, p. 29), Colorado western-slope interests organized to fight for a tunnel under Loveland Pass. Their first move was to press the State Highway Department for engineering studies.

Colorado River feud erupts

A new chapter in the 30-year fight between California and Arizona over the water supply in the Colorado River was opened last week with the filing of a petition in the U.S. Supreme Court, asking it to accept jurisdiction in the dispute.

The 54-page motion and complaint, charging that failure to settle the long-standing quarrel threatens Arizona's economy with destruction, was filed by J. H. Moeur, Phoenix, chief counsel for the Arizona Interstate Stream Commission.

It was a surprise action on the part of Arizona's water forces and is the third time the state has sought a Supreme Court ruling on Colorado River water rights.

Arizona's claim states it is entitled to 2,800,000 acre-ft of main stream Colorado River water, as set forth in the Boulder Canyon Project Act, while California is limited in perpetuity to an annual consumption of 4,400,000 acre-ft from the Colorado as provided in that state's self-limitation act.

• **Old enemies**—The Arizona action comprised a motion for leave to file a bill of complaint. Named as defendants are:

The State of California, the Palo Verde Irrigation District, Imperial Irrigation District, Coachella Valley County Water District, Metropolitan Water District of Southern California, San Diego County and the cities of Los Angeles and San Diego. All are old foes of Arizona in one of the longest and most bitter interstate disputes.

At stake is Arizona's claim to the right to use 2,800,000 acre-ft of main-stream Colorada River water, plus the right to use the Gila river up to 1,000,000 acre-ft annually.

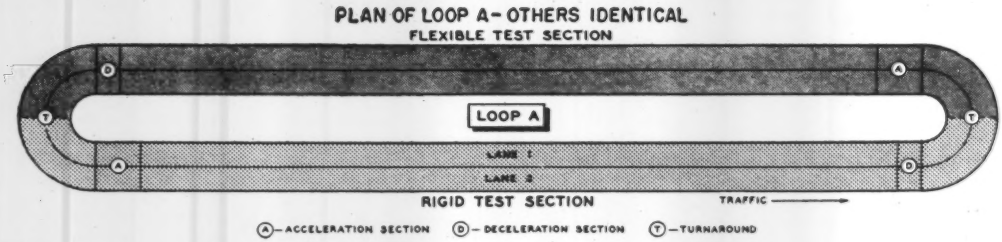
Arizona charged that California is diverting and using Colorado River water in excess of California's legal entitlement, thus threatening Arizona's share of the river. Basis of the charge is that this year, for the first time in history, California will exceed her compacted and legally apportioned share of the river's waters. At her present rate of consumption, it is charged that California will this year divert 5,430,000 acre-ft.

"Use of such quantities of water," the complaint declares, "is in derogation of the rights of Arizona and should be enjoined and forever restrained. The injury and resulting damage to Arizona and its people by reason of the actions, threats and claims of California are so great that they are incapable of estimation.

• **Background**—The Central Arizona Project, requiring construction of a huge dam across the Colorado above Hoover Dam or a pumping plant to take the water from the river above Parker Dam would divert 1,000,000 acre-ft of water to Arizona's central valleys.

It was upon introduction in Congress of a bill in 1946 providing for the project that the Arizona-California water battle became intensified.

After lengthy hearings the bill was passed by the Senate in 1950 and again in 1951. Each time it was permitted to die in House committees after bitter opposition of California lawmakers.



FOUR LOOPS, each with 6,000 ft of pavement on tangent in four test lanes, are proposed to be built along the route of a projected 4-lane highway. This will permit laying 12 different types of pavement, each 500 ft long, in each lane.

Illinois site picked by AASHO for big pavement test

Illinois has been selected as the location for an elaborate highway pavement study planned by the American Association of State Highway Officials. To cover both flexible and rigid pavement types, this new research program, if it can be financed, will be much more extensive than any road research ever undertaken.

In an effort to find a site where soil and climatic conditions would be representative of road conditions in many states, various sites were examined. The one chosen is along the route of a projected relocation of U. S. Highway 6 between between Ottawa and LaSalle, Ill. In that area the topography, the alignment of the proposed highway and uniformity of soil conditions are as close as possible to the ideal sought by the AASHO Committee on Highway Transport.

Along this route it is proposed to form four consecutive test loops by laying turning arcs at the ends of 6,000-ft long sections of the future four-lane divided highway. The pavement in each loop will be 24 ft wide, providing two separate 12-ft test lanes for two different axle loadings. Each loop will contain rigid pavement on one side and flexible pavement on the other, and these in turn will be subdivided into 500-ft. sections of varying cross-section.

Each loop will be on tangent, as nearly level as possible, and built on a fill of material as nearly uniform as can be obtained.

• **Pavement types**—Rigid pavements will be of portland-cement, air-entrained concrete using cement from one source and aggregates of uniform gradation from a single source. In the various test sections, slab thicknesses and base thicknesses will be varied, also the character of the base material, reinforcing, and joint spacing.

Flexible pavements are to be hot-mix, hot-laid bituminous concrete using high stability aggregates and with aggregates and bituminous material from a single source. Thickness and type of surfacing, of base and subbase are to be varied.

• **Vehicles to be used**—Test vehicles are to be three-axle and five-axle truck-tractor and semi-trailer combinations. The single axle loads will range as follows: 14,000; 18,000; 22,400 and 30,000 lb. Tandem axle groups are to be 28,000; 32,000; 40,000 and 50,000 lb.

Traffic operations are planned to be continuous in each loop for two 10-hr shifts each day, six days a week, for at least 12 months of operation.

• **Costs to be compared**—Careful records of the cost of building each type of pavement are to be kept to provide a measure of how much more a pavement capable of carrying 22,400-lb axle loads, for example, will cost than a pavement adequate for only 18,000 lb.

This information, officials hope, will provide the basis for sound economic comparisons of the cost of providing truck operators with pavements adequate for higher axle loads against the savings in truck operating costs that such higher loads might make possible.

• **Maintenance costs to be studied**—Unlike the Maryland Test Road No. 1 (ENR May 22, 1952, p. 80), where only minor maintenance operations were carried out during the test runs, these test pavements are to be fully maintained and the costs of the maintenance will be kept separate for each section.

These maintenance costs will provide information to answer such questions as how much it should cost to maintain a pavement designed for say 18,000-lb loading if 22,400-lb loading is given permission to operate over it.

Following completion of the test runs, it is proposed to remove the turnarounds at the ends of each loop, lay new pavement to connect the remaining tangents, and thus make the loops part of the pavement on relocated U. S. Route 6. This will make possible continued observation of the test pavements under normal traffic conditions for a pre-determined period of time.

• **Bridge test planned**—Also proposed is construction of single-span bridges in lanes subject to the heaviest truck loading.

The bridges would be located near the high-speed end of acceleration lanes and would be built to AASHO specifications. The spans would be constructed in pairs, each under a single lane and separated by a slot so that each would act separately under load.

• **No money yet**—The big if in all this planning is whether the money to finance its estimated cost of $4 million can be raised. Funds for the Maryland test road were obtained from several of the state highway departments, the Bureau of Public Roads, the Highway Research Board, oil companies, truck manufacturers and truck operators. Similar groups are contributing to the flexible pavements tests that have been started in Idaho. At the present time all the state highway departments are being canvassed by the AASHO as to the probability of their being able to contribute in some manner to the cost of this larger project.

Represented on the working committee for this larger project, in addition to some of the state highway departments, the Bureau of Public Roads and the Highway Research Board, are the Portland Cement Association, the Asphalt Institute, the American Trucking Associations, Inc., the Automobile Manufacturers Association and the National Highway Users Conference.

Military services program $133 million for hospitals

Presidential approval is expected soon for a $133-million military hospital construction program based on an entirely new approach. Army, Navy and Air Force projects—35 in all—will, for the first time, follow uniform basic designs adopted in concert by the three services, with an assist from the Munitions Board.

Money is appropriated and waiting. Basic designs are ready—or in final stages of being readied—for the sizes of hospitals that make up nine-tenths of the program. Only the President's signature is needed to move the projects into the active phases of (1) determining the construction priority of the jobs on each service's list, (2) putting the basic plans into the hands of architectural firms to develop working drawings for each hospital and (3) advertising for construction bids.

An Army announcement tipped off the construction schedule (ENR Aug. 14, p. 123). The Army wants to take bids on the first of seven new permanent hospitals by March 1 and to complete all the projects within two to three years.

Initial capacity of the seven hospitals will be 3,200 beds. A hospital addition at an eighth location increases the Army program by 366 beds to a total of 3,566 beds. Congress has authorized expenditures of $45 million for the eight jobs, and the funds have been appropriated.

• **Airmen get more**—Air Force plans are about as far advanced as the Army's. The Air Force, with more bases and smaller complements, will build a larger number of hospitals with lower bed capacities. The Air Force program calls for new hospitals at 24 locations, to accommodate 3,600 beds. Included are two additions housing 125 beds between them.

Congress has authorized $61 million for the Air Force hospitals and has voted the money. Funds likewise are available to cover a $27-million expenditure on three Navy hospitals.

Navy shore hospitals run to large size. The Navy program includes one new permanent hospital with initial capacity of 800 beds and two so-called additions at existing locations to take care of 1,500 more—a total of 2,300 beds in all.

All three services will build expandable hospitals that can be augmented with minimum difficulty and cost. Each initial unit constitutes a chassis which can be added to as need arises.

• **Design worked out**—Uniform basic designs for all sizes of hospitals have been developed with that end in view. Working with private architects, a military hospital task group brought the basic plans into being in a remarkably short time.

Officially labeled the Munitions Board Task Group for Development of Design Requirements and Construction Standards for Military Hospitals, the inter-service committee was created a little more than a year ago, on April 6, 1951. To the surprise of outside observers, the committee has produced results on hospitals far beyond anything attained on other structures, such as barracks and warehouses, that are common to all three services.

High brass from the medical and construction divisions of the three branches were soon serving on the task group. Lower echelon representatives were quickly displaced by top officers when the Army, Navy and Air Force found the committee was getting down to serious business.

Once the basic decision on expandable hospitals had been made, the task group assigned to each service the sizes of hospitals that it used most. Thus the Army got the job of developing basic designs for two permanent expandable hospitals: the 250-bed and a 500-bed chassis and the 500-bed on a 1,000-bed chassis.

To the Navy was assigned the basic design of the largest permanent hospital, an 800-bed unit on a 1,500-bed chassis. All the smaller hospitals were turned over to the Air Force.

In brief, the Air Force was made responsible for three sizes of permanent hospitals and three sizes of temporary hospitals. The permanent expandable hospitals are: 75 on 150-bed, 100 on 200-bed, and 150 on 300-bed. In the temporary group, the sizes are: 50 on 100-bed, 75 on 150-bed, and 150 on 300-bed.

• **Plans practical**—Each of the services called in private architects to work with it in developing basic designs. From preliminary schematics to final drawings, the plans are thoroughly studied and criticized at frequent meetings of the task group, with the designing architects in attendance. In the end, the final plans must meet the approval of all three services and also of the Armed Forces Medical Policy Council, which sits in on the task group conferences.

NEWS BRIEFS

• **Infighting**—Latest maneuver in the long battle over the $110-million public housing project in Los Angeles (ENR Aug. 14, p. 25) came last week as the City of Los Angeles asked the U. S. Supreme Court to reverse a California Supreme Court order requiring the city to carry out the project. The City Council, backed by public referendum, is trying to withdraw from the project; the city housing authority won the State Supreme Court test, which required the project to continue. The city attorney now contends the State Supreme Court erred: (1) In holding that the Federal Independent Offices Appropriation Act of 1952 does not authorize a local governing body to reject the project, (2) in holding that the U. S. Housing Act of 1937 does not permit a city to terminate a project after it has been started. No action is expected before October.

• **Water battle**—The Justice Department last week turned over to the Navy the hotly controversial Santa Margarita River water rights lawsuit in California. The Justice Department is barred, by an appropriation bill rider, from spending any more money on the suit. It has been turned over to the Navy, which owns Camp Pendleton where a water shortage is claimed. The government claims it bought water rights along with the Santa Margarita Ranch, where Pendleton is located, and it wants to build a dam on the property for storage purposes. More than 3,000 residents in the San Diego area are involved in efforts to prove their own upstream water rights (ENR July 31, p. 23).

• **Prefabricated bunkers**—The U. S. Marines fought off savage Chinese attacks in Korea last week from behind bunkers made of timber sawed and shaped so that it can be put together in stacks without the use of nails. Marines captured Bunker Hill on the Western front, early Tuesday. When the first counterattack came that afternoon, the prefab bunkers were in position and attacks were beaten off.

• **Diamond Heights advances**—The Housing and Home Finance Agency in Washington has approved an advance of $189,355 to San Francisco's Redevelopment Agency to finance final plans for redevelopment of 325 acres known as Diamond Heights (ENR July 10, p. 46). The money will be used for engineering and preparation of final plans for the project. It will go to the city's Board of Supervisors for approval next summer, to make it available to private investors.

How these K&M insulations keep heat under power's "thumb"

THE PICTURE ABOVE, taken in a large Eastern power station, is good, but it can show only the "skin-deep" beauty of the Keasbey & Mattison Insulations on the feed water deaerator in the background and the duct in the right foreground. Under the glistening surfaces, finished tightly with K&M Insulating Cement, lies this interesting heat-keeping story.

On the feed water deaerator, the "defense in depth" against heat loss is provided by K&M Hy-Temp Blocks, 1½" thick, covered with "Featherweight" 85% Magnesia Blocks, 1½" thick... an ideal combination that makes the most of the high heat-resisting qualities of Hy-Temp and the high insulation value of "Featherweight" 85% Magnesia. Alone, "Featherweight" 85% Magnesia is good for temperatures up to 600° F. (on the duct shown it is more than sufficient); its combination with Hy-Temp provides efficient insulation from 600° to 1900° F.

These K&M Insulations are practical, economical, and durable. The insulating properties of "Featherweight" 85% Magnesia are not affected by alternate heating and cooling . . . by wetting and drying . . . and, being mineral in nature, will not burn. Both insulations are supplied in appropriate forms and thicknesses for all equipment surfaces and piping.

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Machinists propose new disputes plan

Meeting in Atlantic City, N. J., last week, the AFL Executive Council took two actions involving the construction industry:

First, the council decided to investigate the International Association of Machinists' proposal for settling jurisdictional strikes with the carpenters' union.

Second, the council referred a suggestion for united action on Taft-Hartley—made by Building and Construction Trades Department President Richard J. Gray—to its standing committee on Taft-Hartley.

The thirteen council members met for a five-day session to iron out a report for the AFL convention in New York City on Sept. 15.

• **Machinists' proposal**—AFL President William Green said that the council had told him to get more details on the machinists' proposal for settling jurisdictional disputes.

For a long time now, the machinists and the carpenters have been squabbling over jurisdictional rights on building projects.

The machinists are not party to the Joint Board for the Settlement of Jurisdictional Disputes; indeed they are not even members of the Building and Construction Trades Department of the AFL.

Whenever the machinists have gone to "law" with one of the building trades, they have usually gone to the National Labor Relations Board. The carpenters have asked that the machinists, "Keep the quarrel in the family."

Recently, machinists' President Al Hayes said: "We are prepared to join with the carpenters and any other organization in the construction trades to establish a referee system through which our jurisdictional problems in the construction field can be settled."

At weeks-end there was no indication of what the council would recommend to the full membership.

• **Changing Taft-Hartley**—Up to now the individual AFL unions—such as the screenwriters, the building trades department and the printers—have tried to change T-H by their own efforts. The AFL, while authorizing such efforts, had not set up a central organization for coordination.

After the failure of Congress to pass the changes embodied in the Taft-Humphrey bill, Gray decided to ask unified action.

The building trades are very anxious to change that part of the law which requires an election among employees before NLRB will recognize the right of the union to act as a bargaining agent for the membership. They claim that this is hardly possible on construction jobs—due to their transient nature.

Gray asked that the council set up a separate committee to coordinate activities of all affiliates of the AFL in seeking amendments of Taft-Hartley.

The council assigned the job to its regular standing committee on Taft-Hartley.

International Association of Machinists' proposal

The parties hereto agree that all jurisdictional disputes shall be handled and finally settled in accordance with the following procedure:

Step 1—The dispute or disputes shall be referred to a standing jurisdictional committee of six members, three of whom shall be appointed by the International Brotherhood of Carpenters and the remaining three by the International Association of Machinists. The standing jurisdictional committee shall meet within one week from the referal date of any dispute or disputes and shall, if necessary, hold at least six conferences within a period of two months in an effort to resolve the dispute or disputes or portions thereof on a mutually satisfactory basis. Any mutually satisfactory understanding reached by the standing committee shall be put into effect immediately and shall not be contingent upon the settlement of the remaining disputes.

Step 2—In the event the dispute is or the disputes or unsettled portions thereof are not resolved by the standing committee within the prescribed two-month period, the (International or General) Presidents of the two unions involved shall call and participate in one further conference of the standing committee in a further effort to resolve the dispute or disputes or unsettled parts thereof. This conference shall be held within two weeks from the date of the latest conference held by the standing committee. Any mutually satisfactory understandings reached shall be put into effect immediately and shall not be contingent upon the settlement of the remaining disputes.

Step 3—In the event the dispute or disputes or unsettled parts thereof are not resolved in the conference prescribed in Step 2, such dispute or disputes or unsettled parts thereof shall be referred to a mediation panel consisting of one representative from each of the unions involved and a third impartial referee who in this step of the procedure shall act in the capacity of a mediator. The referee shall be selected by mutual agreement of the parties involved in the dispute and shall be retained on a permanent basis until all existing disputes are resolved.

The mediation panel shall meet for the purpose of mediating the dispute or disputes or unsettled parts thereof within one week following the previous conference referred to in Step 2 and shall hold at least four conferences within one week from the date of the first meeting of the panel. Any mutually satisfactory understanding reached shall be put into effect immediately and shall not be contingent upon the settlement of the remaining disputes.

Step 4—In the event the dispute is or the disputes or parts thereof are not resolved in the foregoing steps, such dispute, disputes or parts thereof shall be referred to the permanent referee. The permanent referee shall, within two weeks from the date of referral, render a decision which shall be final and binding upon the parties in the dispute.

Step 5—Each party to this agreement shall post a "good faith bond" of $100,000 which will be forfeited to the other party involved in any dispute in the event one party (a) cancels, modifies, or in any way alters the agreement by unilateral action, or (b) if one party refuses or fails to carry out all of the terms and provisions of any decision rendered by the referee.

Two winners in same court fight

Both sides can't win the same labor dispute in court—as a rule. But an exception to this rule has popped up in Cincinnati.

The U. S. Court of Appeals in two companion cases: assessed a penalty of $30,000 on the AFL brick and clay workers union for conducting a secondary boycott strike against the Deena Artware Co., Paducah, Ky.; ordered sixty-two AFL brick and clay members reinstated with back pay at Deena, since there was no secondary boycott in the same dispute.

The Cincinnati judges blamed the conflicting awards on the fact that different lawyers and witnesses appeared in handling the cases at the trial level.

Production workers at Deena's pottery-lamp base plant went on strike when contract negotiations between the brick union and the company broke down. The union filed an unfair labor practice charge with the National Labor Relations Board.

Deena went to a Kentucky district court charging the union with conducting a secondary boycott. One issue appearing in both cases was whether the pickets violated Taft-Hartley by extending their lines around the company's new plant construction site located next to Deena's old plant.

• **Ruling**—NLRB ruled as a matter of law, the strike was primary—not secondary—since it was confined to the employer's immediate premises. The board did not adopt its trial examiner's holding that the AFL teamsters, who had a separate dispute with the building contractors and were also picketing the new plant site, were responsible for the construction ticup.

NLRB ordered reinstatement of the striking workers, saying Deena had violated Taft-Hartley by refusing to bargain in "good faith" with a certified union. The Cincinnati court ordered this ruling enforced.

Meanwhile, in the District Court, Deena said the brick union halted the construction work in an attempt to force Deena to negotiate a contract for its production workers. A jury found the brick union guilty—not the teamsters—and awarded Deena $30,000 in damages under T-H; the Cincinnati court affirmed this judgment, too.

The harassed appellate judges admit the findings are inconsistent, but the duty of a review court is to see if findings are based on the evidence. The judges agree the jury and NLRB findings were based on evidence, so the decisions stand.

No one has said so yet, but either the union or the company will surely appeal to the Supreme Court to rehash this stew. After all, both sides can't win—or can they?

Trades council demand ignored by operators

In the face of mounting pressure to return to work, some 600 senior members of the operating engineers union (AFL) voted this month to continue their three-month-old strike of key construction jobs in Philadelphia.

The strike, marked by violence and arrests, has tied up nearly all major construction projects in the Philadelphia area.

The vote by the striking engineers came after a demand from the Philadelphia Building Trades Council, earlier the same day, that the union end its strike within 48 hours.

It also followed a "suggestion" by William E. Maloney, Washington, general president of the International Union of Operating Engineers, that the locals accept the latest offer proposed by the contractor-employers.

Roy J. Underwood, president and business manager of Locals 542, 542A and 542B, said that his union was ignoring the Building Trades Council. The council said it will call all of its members off building projects where operating engineers are employed, if the engineers don't end their strike "immediately."

"We take what they say lightly," Underwood declared. "They've taken every means they can to fight us." Other union officials asserted that the locals have received ultimatums from the trades council every two weeks.

"We don't pay any attention to them any more," he said. Underwood told the members at the meeting that he made a trip to Chicago on July 27 and discussed the prolonged strike with Maloney. The general president suggested he return and resume negotiations. Then, Underwood continued, he received a phone call from Maloney outlining terms of a settlement. The proposals he recommended were substantially the same as those put forth by the three contractors' associations they are striking against, Underwood said.

About $100 million worth of contracts are tied up.

In demanding an end to the strike, a spokesman for the Philadelphia Building Trades Council, which has 35,000 members, said the work stoppage has put some 6,500 of its men out of work. He said the council fears that within weeks its entire membership might be unemployed because of a strike in which it has no part.

Underwood said a meeting with General President Maloney is planned.

To add to the already complex labor situation, the AFL's local Maritime Trades Council with 35,000 members is supporting the engineers.

Differences committee

Now that the AFL Building Trades Department has cracked down on picketing in jurisdictional disputes as a means of strengthening the National Joint Board procedure, it is taking other steps to solidify the dispute-settling plan.

A committee has been set up to iron out the differences between the 19 AFL unions over the operation of the plan and bring the electrical workers and lathers back into the fold. The IBEW pulled out last winter and the lathers, last May.

Joint Board officials are confident that all unions will be back under the plan before long. It's mainly a case of differences over procedures, they say, with the unions dealing with specialty contractors feeling that the other unions are getting an advantage.

Included on the AFL committee is Dan Tracy, president of IBEW. Chairman is Harry Bates, head of the bricklayers.

Steel erector's strike hits $100-million project

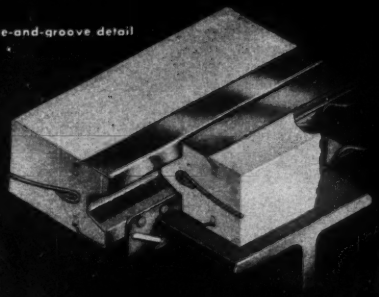
Eleven steel erection contracting firms in Louisville have been struck by Iron Workers Local 70 as the result of a contract dispute.

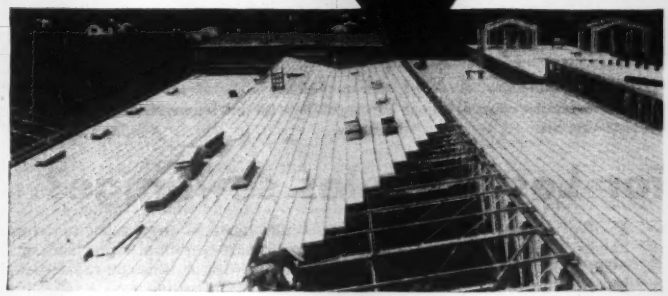
Biggest project affected by the walkout is the $100-million General Electric Company's "Appliance Park," now under construction in Buechel, a Louisville suburb.

The AFL union struck against three steel-erection sub-contractors at the G.E. job but left three out-of-town erection firms alone.

The union has requested a 7½-cent hourly employer contribution to the union's health and welfare fund. A 15-cent hourly wage increase was requested and accepted by the Employer's Association.

Tongue-and-groove detail





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What's next for Los Angeles sewerage?

L. L. Wise
Associate Editor

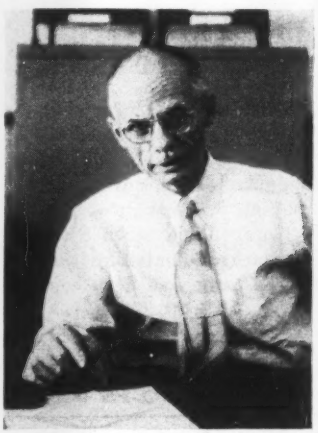
Los Angeles city officials have discovered that substantial completion of the biggest—and most controversial—sewage plant in the West has not removed the need for further multi-million dollar expenditures for sewerage and sewage treatment. That was made clear in a recent report to the Bureau of Public Works by consulting engineers Metcalf & Eddy, outlining a long-range program. This involves $21 million of construction in the next 5 years and another $20 million over the next 25 years.

In the meantime, initial operating "bugs" have been substantially worked out of the complex 245 mgd high-rate activated sludge plant. And the plant is now operating at 96% of design capacity.

Hyperion's five-year construction period has been clouded by controversy—mostly political. Some administrative and personnel shifts have toned down the turmoil but the main cause of it still exists: The political differences between Mayor Fletcher Bowron and City Engineer Lloyd Aldrich—the latter was an opposition mayoralty candidate in two elections. Some officials hope the recent findings of a task committee for Los Angeles' "Little Hoover Commission" will relieve the controversial pressures.

• **New plant needed**—The major new unit called for in the Metcalf & Eddy report is a 60 mgd activated sludge plant at the mouth of the San Fernando Valley. This would be complete in 1955, would be enlarged to 90 mgd in 1965, and finally to 105 mgd in 1980. Hyperion would be expanded to 315 mgd capacity in 1965. An extensive trunk sewer program is also involved.

This program is based on estimated average total flow of 420 mgd in the year 2,000—almost double the present flow. Alternates considered included immediate expansion of Hyperion to 315 mgd and later construction of a new plant at Hyperion to have an ultimate 105 mgd capacity. Another alternate contemplated a plant at Torrance with an ultimate capacity of 175 mgd. This would have a separate outfall.



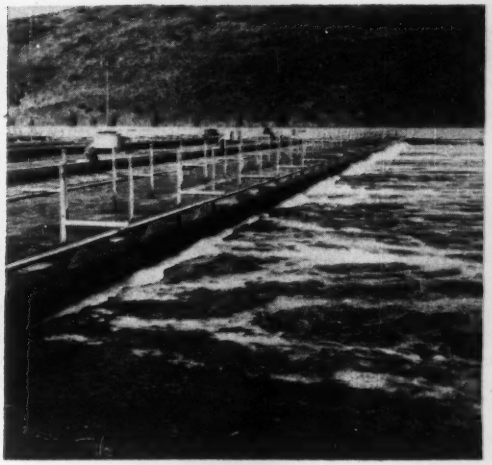
OPERATOR OF HYPERION, largest sewage plant west of the Mississippi, is G. A. Parkes.

The Colorado treatment plant scheme (named for Colorado St. near the mouth of the San Fernando Valley) proved cheaper. Its $41 million total compared with $64 and $60 million for two Hyperion No. 2 plans and $81 million for the Torrance arrangement. Biggest saving comes from reduction in the required carrying capacity of trunk sewers. That's because treated effluent would discharge into the Los Angeles River. And that's expected to be the major point of controversy about the Colorado plant plan.

To overcome the objections of officials of local governmental units that border the river in the 20 miles between the plant and the ocean, the report says a high degree of purification will be needed. The "step aeration" process as applied in New York City is recommended. The report points to the possible objections but emphasizes that the "savings involved are too substantial to warrant rejection" of the program.

• **Trouble at Hyperion**—Meanwhile, the plant at Hyperion is in full operation (except for some minor fertilizer preparation facilities). But getting to this stage has involved troubles of the sort that beset any complicated biological process. These troubles include foaming digesters, frothing aerators, in-

FROTH ON AERATORS was a major early operating problem at Hyperion. Wide scale public use of detergents is named as cause of the condition.



WATER SPRAY (left) was installed to cut froth as it develops on aerators. This has reduced froth problems but higher water pressures are needed for complete control.

sufficient vacuum filter loading and too much air demand.

The troubles are attributable to a number of matters including lack of trained operating personnel, early operation on a partial or piecemeal basis and lack of complete, intimate and detailed knowledge of the particular sewage to be treated. And all of these causes can be traced directly to the haste that court action required in constructing and operating the plant.

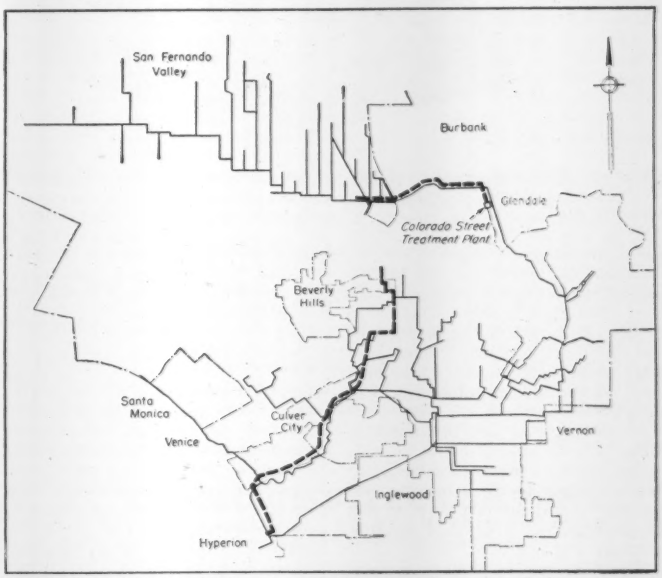
Pollution of some 12 miles of Pacific Ocean bathing beaches resulted in a quarantine by the State Board of Health. This agency thereupon secured a court injunction eight years ago that demanded action on the part of Los Angeles officials. It also applied to other smaller towns contributing to the Hyperion flow. In the process, city councilmen of Vernon and Culver City, Calif., were jailed because those cities ignored the injunction proceedings.

Deadline for compliance with the injunction was extended from time to time because of war conditions and materials shortages immediately subsequent to the war. But initial settling and disinfection features of the plant were rushed into operation on May 15, 1950, as required by the injunction. This resulted in lifting most of the quarantine.

The plant took the full flow late in 1950 and by the 1951 bathing season, the activated sludge part of the plant was in operation. Last major portion of the plant to be operated was the electriation system that started this May. Sludge tanks were used as temporary electriation facilities before this but this was found to be none too successful in practice.

The quarantine is now entirely lifted, a high quality effluent is being produced and operating "bugs" are gradually being eliminated. This latter has not been easy and much credit should be given to Chief Operator Geoffrey A. Parkes who has virtually lived with the plant for years. As a member of the city engineer's staff, Parkes supervised Hyperion's process and mechanical design. When time neared for first operation, Parkes took charge. Several consultants have been called in to help with specific problems but Parkes has headed up the day-in, day-out operation and trouble-shooting that has been a constant necessity.

(*Continued on page 34*)



FUTURE CONSTRUCTION recommended by engineering report calls for a new treatment plant at the mouth of the San Fernando Valley and addition to the capacity of the Hyperion plant. New trunk sewers are shown in heavy dashed lines, existing sewers as lighter continuous lines.

SOME OF THE CONTROVERSY over Los Angeles sewage works is directly attributable to the political differences between Mayor Fletcher Bowron (left) and City Engineer Lloyd Aldrich—twice rivals for the mayor's job.

• **Detergent froth**—Perhaps the most spectacular operating problem was the froth or suds that developed on aerators when they went into operation. (EDITOR'S NOTE—"Froth" is used in preference to the more common term "foam" since the latter is more generally applied in sewage treatment work to the substance formed on foaming sludge digesters.) Cause of the froth is extensive use of chemical detergents in homes and industry. At Hyperion an almost continuous blanket 5 to 10 ft deep covered the aerators.

Immediate remedy was breaking of the froth by hosing. Ultimate solution was the installation of water spray equipment on each aerator to cut the froth. And this isn't operating with complete satisfaction yet because spray pressure is not great enough. The water pressure will probably be increased from 5 to 20 psi.

• **Vacuum filter loading**—One of the yet unsolved problems at Hyperion is failure to get the expected loading on the 16 vacuum filters that reduce water content of the digested sludge. Constant experimentation has been—and still is—underway to determine the cause of this and to find a remedy for it. The most probable explanation is that the sludge is extremely fine. And that's most likely due to the long travel of the sewage before reaching the plant—as much as 55 miles.

The sludge is so fine that digested sludge will not concentrate in the secondary digesters. Recently it has been discovered that it will concentrate better after elutriation and two of the 18 digesters are being used for this purpose.

The filter rate has improved since the permanent elutriation system went into operation this May. But the rate is still not satisfactory.

The operators have experimented with various coagulants with little success. Lime used with ferric chloride gave promising results. But that raised the pH to the alkaline side and impaired sale of the sludge as a fertilizer. An acid fertilizer is needed in the arid, alkaline Southern California area. (Some 1,500 to 2,000 sacks weighing 80 lb each of dried sludge is produced daily.)

So research on this problem continues and final results may be of considerable interest.

• **Air demand**—Design figures called for an overall use of 0.51 cu ft of air per gallon of sewage treated. Actual demand has been much higher. The operators now have reason to believe that 0.85 cu ft per gal will be the ultimate demand. This has meant continuous operation of all four 40,000 cfm blowers. Maintenance shut-down of any one blower means that only part of the flow gets the full activated sludge treatment with the rest getting primary sedimentation only.

Reasons for high air demand may be manifold. Stale sewage could require more air for reduction of oxygen demand. High detergent concentration may also contribute. Research on this problem is presently being carried out by Prof. C. N. Sawyer at Massachusetts Institute of Technology.

• **Hyperion attacked**—There has been much controversy over the Hyperion plant both political and professional. The professional controversy has been on a level dictated by differences of opinion between responsible engineers. For example, a report by a consulting board of Charles T. Leeds, A. M. Rawn, and Franklin Thomas made in 1947 recommended a lesser degree of treatment. They suggested substitution of plain sedimentation and sludge digestion together with a 2-mile ocean outfall (instead of a 1-mile line). They would have deferred construction of the activated sludge portion of the plant until tests on the operation of the initial part of the plant indicated it was necessary.

This plan was rejected by city officials—possibly because of the injunction that demanded an immediate positive remedy of the beach pollution.

The political controversy resulted in part from the differences between the mayor and the city engineer. Hyperion became an issue in political campaigns and after. Minor operating troubles such as outlined in the foregoing were magnified to appear as major blunders. Mismanagement was also charged but not proved.

These political differences are due in part to the organizational setup of the Los Angeles Board of Public Works. The board consists of five full time commissioners with extensive powers. It is subdivided into bureaus, each of which is a relatively independent operating agency.

In the Hyperion case, design was under the Bureau of Engineering, construction is supervised by the Bureau of Inspection and the plant is now (since May 1, 1952) operated by the Bureau of Sanitation. Lack of coordination and liaison between these bureaus has been the subject of considerable criticism.

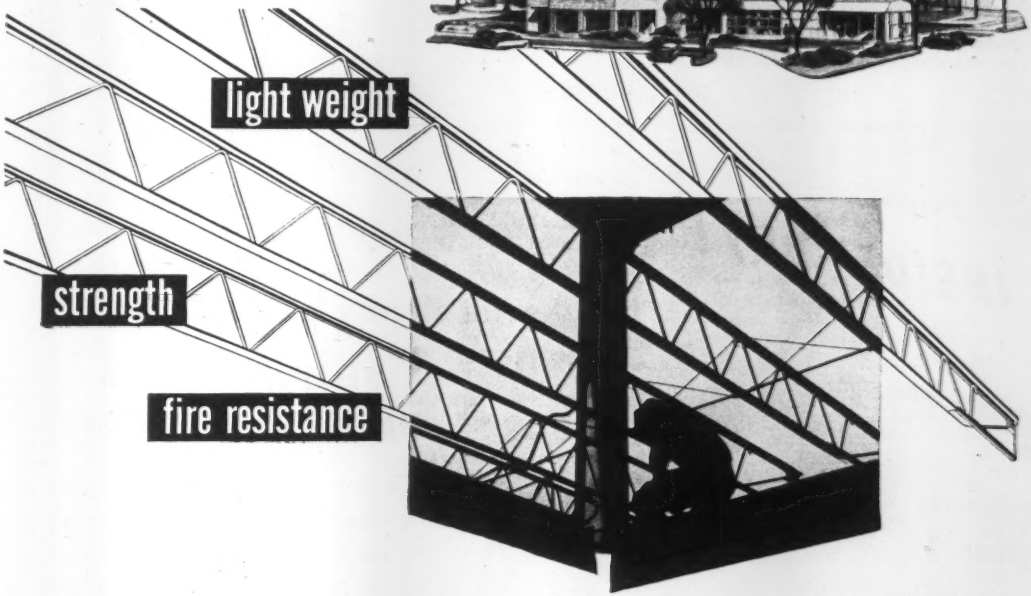
Many believe recent changes will, to some extent, clarify the situation. These have included some shuffling of bureau functions and personnel. One specific change was to place operation under the Bureau of Sanitation, headed by W. A. Schneider, waste disposal engineer instead of the Bureau of Engineering under Lloyd Aldrich, city engineer. Peculiarly enough this latter shift was accomplished with no changes in plant operating personnel.

Others think the situation won't be cleared up until a complete revamping of the entire organization is made. This apparently is the position held by a task committee of a "Little Hoover Commission" studying reorganization of the city government. This group wants to put the public works department under a general manager with the public works board in an advisory and not administrative capacity. A revamping of the public works bureaus is also called for. If the city council accepts this suggestion, it will be placed on the November ballot for voter approval.

Meanwhile, work is progressing on further sewerage system improvements under a $21 million bond issue passed in 1951. And Hyperion operation is improving as "bugs" are removed. The acid test here is freedom of the beaches from pollution as indicated by periodic tests.

Architect Henry Sprott Long of Long & Gatling says:

"We specified Truscon "O-T" Steel Joists for the Highland Tower Apartment Building to assure...



Hundreds of structures such as the Highland Tower Apartments in Birmingham, Alabama, indicate the trend toward lower cost per square foot construction while assuring adequate strength and safety with Truscon "O-T" Steel Joists.

Light Weight. The light weight of Truscon "O-T" Steel Joist construction lessens the time and labor required for erection and also saves materials in the supporting framework and foundations. Every detail of joists and attachments has been perfected by practical experience to simplify installation and assure dependable results.

Strength. Wide, specially formed members for top and bottom chords impart stiffness to Truscon "O-T" Joists and keep them true to line. The continuous steel web member, of uniform diameter throughout its entire length, is securely welded to the chords by means of high pressure electric automatic welding.

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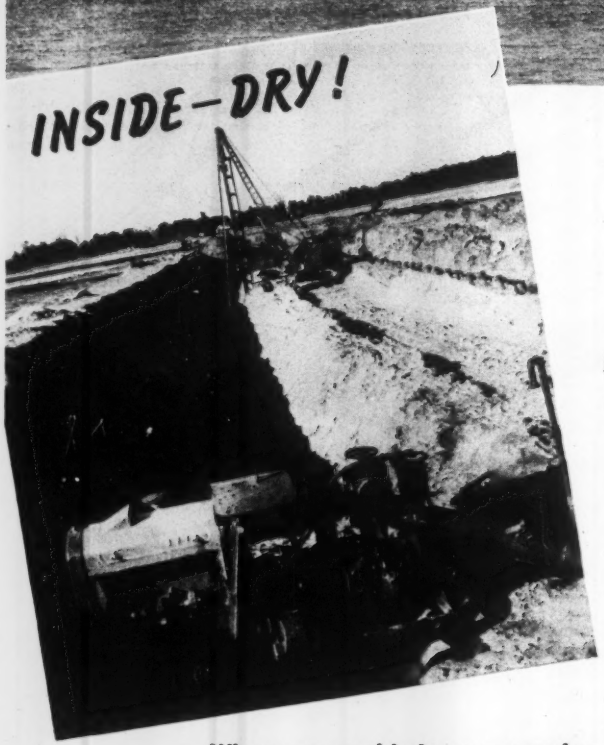

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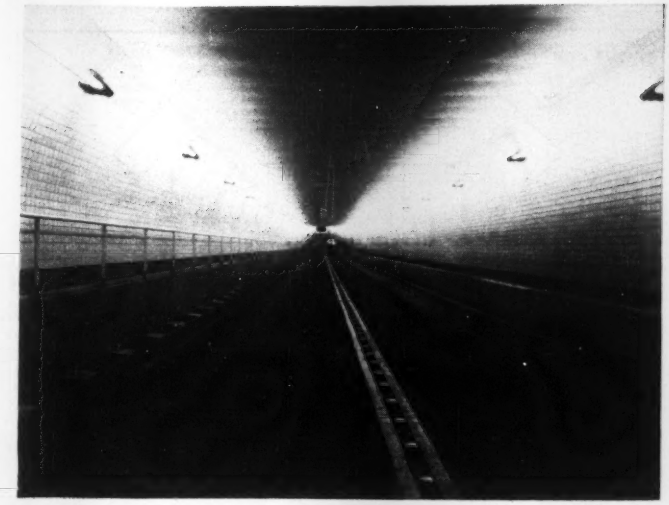


SMOOTH CEILING of Elizabeth River Tunnel is lightweight, easy to install, easy to clean and free of missile hazard in case of fire. Ventilation grilles on curb at left take air that is drawn into tunnel through portals. Air also exhausts through ceiling grille at tunnel's midpoint.

Porcelain-enamel panels introduced for tunnel hung-ceiling construction

T. O. Blashke
Associate Engineer
Parsons, Brinckerhoff, Hall and Macdonald
New York, N. Y.

There are several advantages in the Elizabeth River Tunnel's hung ceiling. Probably the tunnel's outstanding innovation, the ceiling consists of porcelain-enamel steel pans filled with concrete for weight and rigidity. Thickness is only three inches.

The tunnel, which was opened in May between Portsmouth and South Norfolk, Va. (ENR May 22, p. 44), is the tenth subaqueous vehicular tube in the United States; the fifth to be built with sections floated to the site and sunk to location. Passing under the river's south branch, it is part of a project that also includes a high-level bridge over the Elizabeth River's east branch to connect with the city of Norfolk.

Hung-ceiling pans measure 7 ft 6 in. by 2 ft 7 in. They are installed with the long dimension transverse to the direction of traffic, and are supported on four rows of continuous stringers, which in turn are hung from the concrete tunnel lining by means of anchored rods.

Most joints between pans are sealed with a ¾-in. dia hollow plastic tube filler strip and caulking compound. An elastic sealing compound and thermoplastic joint filler close the small gap between the concrete lining and the adjoining edges of the ceiling units. Transverse expansion joints are at intervals of 23 ft 6 in. These joints are sealed at the bottom with a ¾-in. dia hollow plastic tube filler and at the top with an elastic sealing compound installed under heat by blow torch to effect adhesion to the panel flanges.

Cross-sections and connection details are shown on the drawing.

• **Advantages**—This ceiling has several advantages over the conventional hung reinforced-concrete slab and tile unit construction.

1. Total thickness of only 3 in. offers the opportunity to gain either about 6 in. more vertical clearance, or 20% additional cross-sectional area in the air duct. For example, the Elizabeth River Tunnel has a posted clearance of 13 ft 6 in., whereas those posted for the New York tunnels vary from 12 ft 9 in. to 13 ft.

2. The comparatively large size of the porcelain units, together with the feature of mechanical fastening to the supporting stringers (rather than adhesive attachment to a slab, as in the case of tile) reduces field installation work to a minimum and offers a simple and fast method of replacement where necessary.

3. Experience in recent tunnel fires in the New York area has shown that the concrete lining expands due to excessive heat, detaching the small tile units and projecting them into the traffic area at dangerous velocities. The special porcelain coating is highly resistant to rapid changes in temperature, remaining unharmed even when subjected to 1,600 deg. F., and the mechanically-supported units eliminate the missile hazard entirely. The Underwriters Laboratories, Inc. have particularly endorsed this feature of the ceiling construction.

4. It is anticipated that this ceiling will be easier to wash and clean due to its extremely hard and smooth surface and the great reduction in joint area as compared with the more conventional small-sized tile construction.

5. Adjustment of the ceiling height can be accomplished after installation by means of U-bolts that support the stringers, allowing a final check and correction if necessary after the roadway surfacing has been placed.

6. Many observers have remarked that this ceiling, with only two parallel joints along the roadway, presents a much more pleasing appearance than the small sized pattern established by tile units.

The development of this type of tunnel ceiling construction is the result of collaboration between Parsons, Brinckerhoff, Hall & Macdonald, consulting engineers, and Seaporcel Metals, Inc., Long Island City, N. Y. It was first conceived some four years ago in connection with a proposed vehicular tunnel in Buenos Aires.

(*Continued on page 38*)

ELIZABETH RIVER TUNNEL

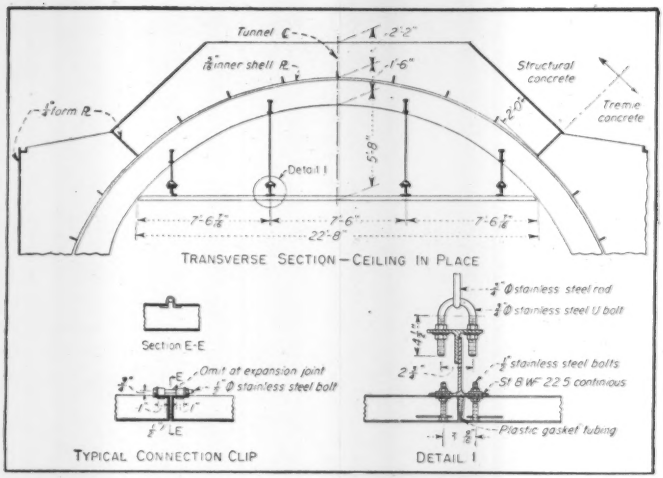
Type: Single tube, made up of seven 300-ft sections sunk to place in trench dredged in the South Branch of the Elizabeth River, which separates Portsmouth from South Norfolk, Va. Approaches to the sunken-tube portion are box sections, built by cut-and-cover methods.

Length	3,350 ft
Diameter	31 ft
Roadway Width	22 ft
Roadway Posted Clearance	13 ft 6 in.
Cost	$15,285,000

(Continued from page 37)

• **Tunnel ventilation**—As a matter of interest in connection with ceiling construction, tunnel ventilation is accomplished by the introduction of fresh air through the portals and then exhausting the vitiated air from the traffic chamber through a large grille in the ceiling and a number of smaller grilles in the curbs located at the center point between portals. Thus the space above the ceiling becomes one of the return ducts to the exhaust fans in the ventilation building, the other return duct being the space below the roadway floor slab. This system of ventilation was selected to provide a better method for exhausting smoke from the roadway in case of fire than is provided in tunnels where only the upper duct is used for exhaust gases. One ventilation building, at the Portsmouth end, contains all the blower equipment.

• **Contractors and engineers**—Merritt-Chapman & Scott Corp. of New York was the general contractor on the construction of the tunnel and the Scaporcel Co. was sub-contractor for furnishing and installing the ceiling. For Parsons, Brinckerhoff, Hall & Macdonald, J. O. Bickel served as project engineer with the writer in charge of tunnel design and preparation of contract drawings. Tunnel owner is the Elizabeth River Tunnel Commission, Norfolk, Va.



EASY INSTALLATION of ceiling pans is indicated by connection details in this cross-sectional drawing of tunnel's upper portion. All hardware is stainless steel, to eliminate maintenance for corrosion.

Half-mile bridge links Tulsa and West Tulsa

Stretching out across the Arkansas River in Tulsa, is the recently completed Fifty-First Street Bridge, key project in the city's multi-million-dollar urban highway program. One of Oklahoma's biggest bridge jobs since World War II, the superhighway span is nearly half-a-mile long.

The bridge is expected to take a traffic load off the existing bridges to West Tulsa. The industrial suburb is a fast-growing area and an increasing amount of traffic has been going across the Arkansas River.

The bridge will also be a link in the Oklahoma network of express highways which ultimately will link up the principal cities of the state.

More than 4,000 tons of steel were required for the crossing, including 2,095 tons of structural steel and 1,094 tons of steel plate. The nearly 3,200 tons of structural and plate steel were supplied from the mills of United States Steel through the Tulsa district sales office of its Tennessee Coal and Iron division.

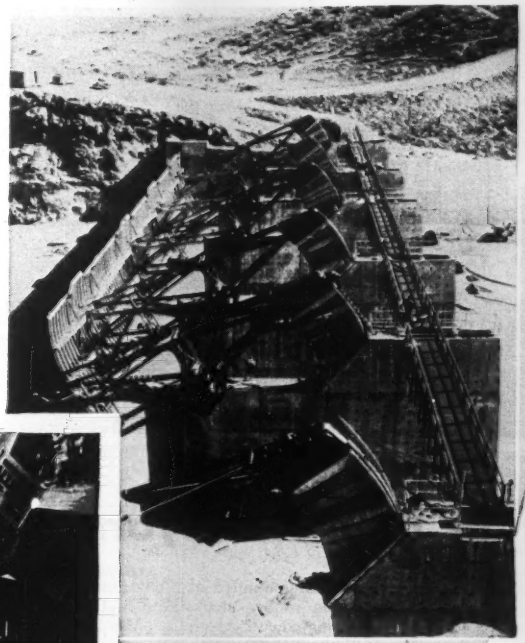
Built at a cost of $1,135,897, the 2,400-ft structure carries two 27-ft divided roadways for two-lane traffic in each direction and four-foot pedestrian walkways for half a mile across the Arkansas River.

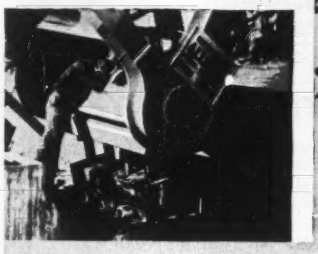
Besides providing an important new link between Tulsa and its industrial suburb, West Tulsa; completion of the Fifty-First Street Bridge paves the way for an ultimate 13-mile bypass express highway.

The urban artery will stretch from the Tulsa-Sapulpa highway (U. S. 66) eastward to the Arkansas River and through the southern part of Tulsa to Memorial Drive, thence north to connect with U. S. Highway 75 and State Highway 33, principal Oklahoma highways.

General contractor for the above span was M. E. Gillioz, Monett, Mo. Steel fabricators were Robberson Steel Co. and Capitol Steel & Iron Co., Oklahoma City, and Flint Steel Corporation, Tulsa.

BIGGEST OKLAHOMA BRIDGE since World War II, the new Tulsa superhighway bridge carries expressway traffic across the Arkansas River to the rapidly-expanding industrial suburb of West Tulsa, from Tulsa.





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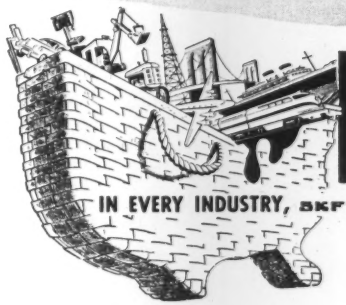

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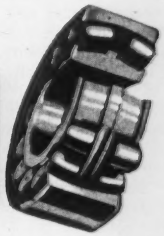

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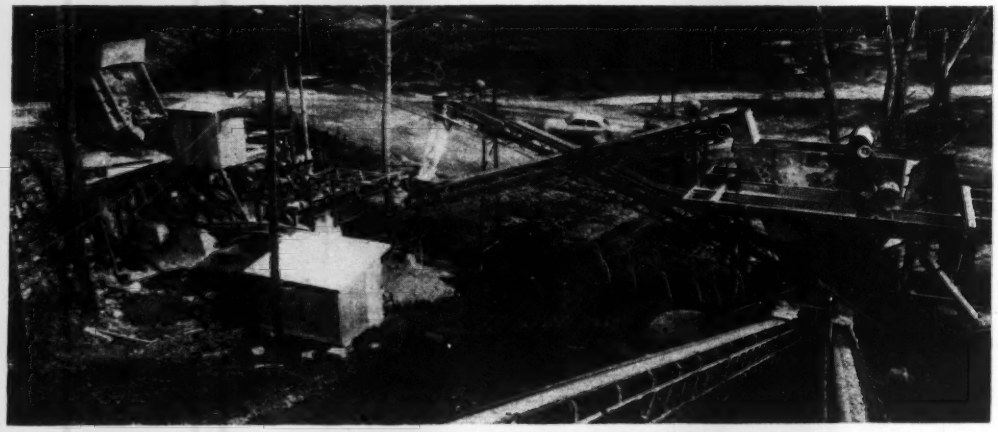


BELT CONVEYORS give almost limitless flexibility in laying out a rock-crushing plant to fit the conformation of a particular site.

Get more out of belt conveyors

Fred Matheis
Assistant Vice-President, Thermoid Co., Trenton, N. J.

BELT CONVEYORS are well known in the construction industry. They form an important part of every rock-crushing or sand and gravel processing plant. They are widely used for moving and stockpiling aggregates at concreting plants and at bituminous paving plants. They have been used for long-distance transportation of earth and stone in dam building, and even for moving concrete to the forms.

Less well known is the fact that the life and usefulness of belt conveyors can be materially extended by proper selection of the belt for a particular job and by following a few simple installation and maintenance practices while the job is under way.

• **Belt construction**—There are many types of conveyor belts available today for both standard and special service, but all belts have a similar construction consisting essentially of carcass and cover. The belt carcass is made up of one or more plies of cotton fabric duck in which the lengthwise (warp) threads are woven over and under the cross (filler) threads, thus giving a distinctive elastic quality in the direction of travel. The warp threads provide the primary strength of the belt.

When belting is subjected to severe flexing conditions, a thin sheet of rubber between the plies, known as a "skim" is advantageous. Covers for conveyor belt are compounded of natural and synthetic rubber stocks together with other ingredients which vary according to the service for which the belt is intended.

A smooth rubber surface is normally used, furnished in various thicknesses to resist abrasion, heat, cutting and gouging. For severe service, a breaker strip is inserted under the cover. This is a ply of open mesh fabric, which increases cover adhesion for maximum resistance to cover separation. Although each ply of the belt carcass usually extends completely across the width of the belt, a special type is available which is known as step-ply construction. The belt thickness is uniform but a thicker layer of rubber is provided in the center and additional duck plies at the sides. This construction is to be considered when there is extreme wear in the middle of the belt as is found in handling abrasive materials.

• **Factors affecting belt type**—To choose the correct types of belt from the many constructions available, consider first the size, density and sharpness of the pieces of material. Large pieces of heavy rock in sharp fragments will require a belt with a thick cover, breaker strip and several plies with skims. Light, fine material can be moved on a less rugged belt. Material in fine sizes, if abrasive, may require a heavy cover in spite of the small particles.

Allow for extremes of temperature of both material and working environment. Belts for both hot and cold materials and climates can be produced.

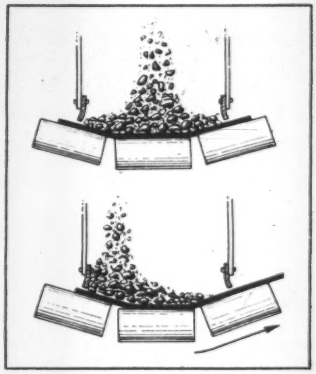
Moisture content of the material is important. Wet mixtures take a different belt than dry ones.

• **Belt speed is important**—The size of the belt is dependent upon the rate at which the material is to be moved, the distance and the horsepower required to move the loaded belt.

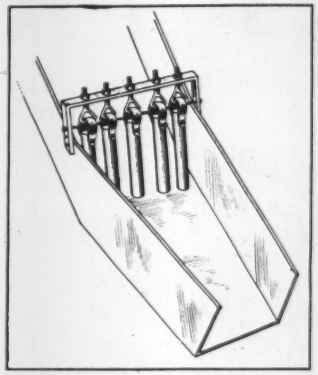
In general, the wider the belt, the greater the cost. It is axiomatic that for a given tonnage per hour, the faster the belt travels, the narrower the belt required. However, the faster the belt runs, the more often it will pass the loading point and the greater will be the wear and maintenance. So it does not pay, in the long run, to save on the first cost of conveyor belting by running a narrow belt at high speed.

A break-even point should be calculated in which a great many factors must be accounted for. For example, a high-speed belt requires more expensive rollers. On the other hand, a wide, slow-speed belt will take longer rollers which may be just as expensive. The high-speed rollers will require more attention after installation. Fortunately, there are many tables, formulas and standard-practice guides to assist the design engineering in making his choice.

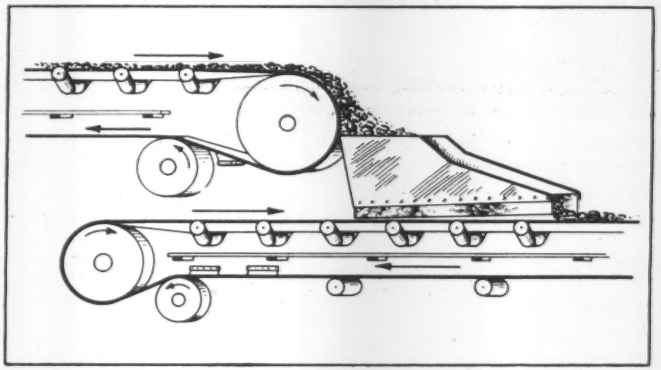
A well-proportioned belt has enough plies to support the load and withstand tension. It must be flexible enough to trough and bend over pulleys without excessively stressing the belt. In general, the minimum



PROPER LOADING has much to do with the life of a belt conveyor. If loading is off-side, the belt rides in the opposite direction, causing edge wear.



SWINGING BARS in a chute carrying lumpy material will slow down the large lumps but will not stop them, thus reducing the chance of damage to the belt.



DROPS FROM BELT TO BELT should be kept to a minimum, and chutes should be arranged so that material falling on the lower belt is moving in the same direction.

ply belt to support the live load also satisfies tension requirements.

• **Reducing belt wear**—The edges of a belt are carefully sealed in manufacture to prevent moisture from getting into the belt. Excessive edge wear destroys that edge seal. Water will then attack the carcass causing mildew and rot. If the water freezes, the ice particles will rapidly destroy the belt.

Edge wear is considered by many specialists to be one of the chief causes of short belt life, and misalignment is a large factor in edge wear. It is absolutely essential for long belt life that the belt carriers be correctly aligned. It generally pays off in terms of increased belt life to take considerable time and trouble to secure as close to perfect alignment as possible. Many installations are aligned with a transit. Reducing edge wear usually means a reduction in power.

It is becoming standard practice to compensate for excessive edge wear by cutting off the worn edges before the belt has completely disintegrated and using the reclaimed, narrower belt in less severe service. New liquid neoprene compounds are available for sealing the newly formed edges against moisture. Liquid neoprene is also useful in building up worn spots in the cover to prevent more extensive repairs later.

Skirt boards are another primary source of edge wear. Construction and placement must be carefully engineered by qualified personnel. Skirtboards should be fastened firmly so that they will not eventually loosen and drag on the belt.

Loading conditions are a prime factor in belting deterioration. The loading point is a danger zone. One of the basic requirements for long belt life is that the material falls on the belt while moving in the same direction and at a speed as close as possible to that of the belt. The material should be directed on the center of the belt, not toward one side. Material falling on the left side will make the belt ride out toward the right and vice versa. As a result, the belt will not train properly and will rub against guard boards and training idlers, if used, increasing edge wear.

When lumpy material is being carried, an attempt should be made to have such material cushioned by a prelaid layer of fine material. A screen or "grizzly" at the bottom of the loading chute will satisfactorily deposit a layer of fines over the belting, thus providing protection against bruising. In some instances an oval or "fish tail" notch cut in the lip of the chute will aid in prelaying the fines.

At the same time, the velocity of loading-material flow should be controlled by pitching the loading chute properly. If this is not feasible, a baffle of iron or wooden bars should be constructed in the chute, suspended from the top and free-swinging at the bottom, to reduce the velocity of material flow onto the belt.

In like manner, the vertical distance between chute and belting should be small to prevent excessive velocity of material which, in the case of lumpy material, might be great enough to cause belt damage.

Material should not strike the belt directly above a solid pulley because the resulting hammer-anvil action will quickly render the belting unusable. The chute should be located so that material will strike the belt between idlers. However, in cases where heavy material is being loaded, it may be necessary to load directly over rubber covered or pneumatic idlers.

In some cases, impact load between idlers will set up belt vibration. Resultant chattering may depress the belt sufficiently to allow material to escape under the skirt-boards. This may be prevented by locating the chute so that loading material will strike the belt far enough ahead of the tail pulley to allow insertion of at least one belt-steadying carrier pulley. Also, carrier pulleys should be more closely spaced around the loading zone because of the impact loading of belt at that point.

• **Design of loading chutes**—Construction of loading chute skirt-boards and flexible skirts should be carefully considered. Skirt-boards should not touch the belt but should be positioned slightly above the belt. They should be long enough to settle the material before it leaves the loading area. Flexi-

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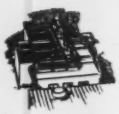

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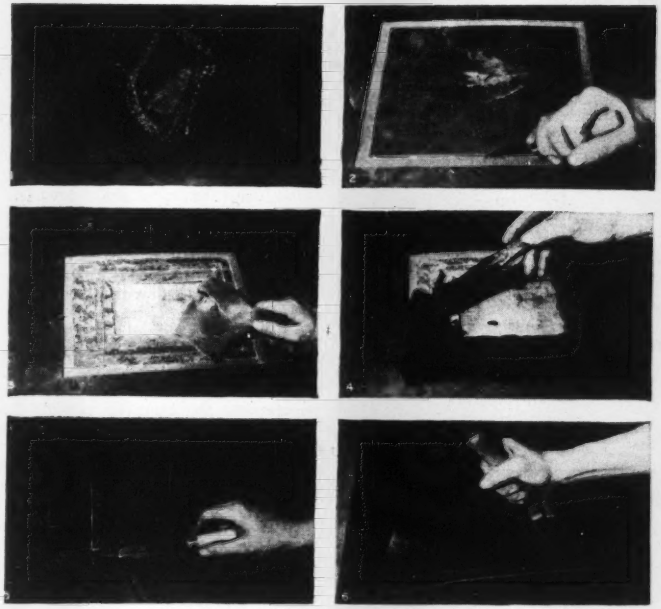


PATCHING A PUNCTURE. Principal steps in patching a puncture (1) are: Removing layers of belt fabric around the puncture in squares of diminishing size (2) until the bottom cover is reached (3); applying rubber cement thoroughly (4); adding squares of new rubber-impregnated fabric (5); and cementing on a piece of uncured rubber (6). After this top layer has been trimmed to size, the patch is vulcanized.

ble skirts are preferably improvised from rubber-covered edges of belting remnant. These remnants should be placed so that the rubber-covered edge is next to but not touching the belting. Should this be reversed, and the exposed-fabric edge of remnant placed against the moving belt, grit will collect in the fabric. Resultant abrasive action will, in time, wear a track through the belt cover.

Vertical spacing between chute skirt-boards and belt should increase toward the open end of the chute. Thus the width of flexible skirts, as cut from a belt remnant, should decrease in the direction of belt travel. This construction minimizes spillage around the loading point. At the same time, wedged-in lumps of material will work themselves free by the forward motion of belting.

• **Belt maintenance**—Belt maintenance begins even before the belt is installed. When received by truck or railroad from the manufacturer, it should never be dropped off but should be skidded, rolled or lifted. If the belt roll falls on a stone or a tool, a cut or puncture may result. If the belt is not installed at once, it should be stored, protected from sunlight, where it is not likely to be damaged.

Installation threading of the belt over the idlers and pulleys is critical and much belt damage may occur during installation. More than ordinary care and planning are needed to avoid sharp bends and to minimize dragging over sharp rough surfaces. Excessive tension in pulling the belt over the idlers and pulleys should be avoided.

Responsibility for belt maintenance should be delegated to one man who with his assistants, checks lubrication, condition of idlers and pulleys, examines the belt for excessive wear, inspects splices at frequent intervals, repairs cuts and tears as soon as discovered, maintains a kit of belt repair tools.

Even with careful maintenance, some material falls off the carrying surface of the belt onto the bottom cover or return side of the belt. If not removed, severe damage to the belt will occur when the belt travels around the pulley and the misplaced pieces are squeezed between belt and pulley. Brushes and scrapers are often used but the best solution to the problem is to completely cover the return side of the belt with a wooden or metal deck.

When a permanent installation is made out-of-doors, it will probably pay to cover the belt with a wooden or steel structure. This will keep off direct sunlight which speeds up oxidation, another enemy of rubber belt. One company has covered a wide belt with a long, continuous Quonset hut which is heated in winter.

• **Belt repairs**—In order to get the maximum service life out of conveyor belting, users should take particular care to repair all belt damage as soon as it is discovered.

Belt fabric exposed to weather will absorb moisture if the protective cover becomes damaged, and may even become soaked. In warm weather, this condition leads to mildew and rot; in winter, ice crystals may gnaw at the fabric from within as the belt flexes.

An adequate repair kit includes sharp cobbler's knives and a stone to keep them sharp; a supply of emery cloth, rubber cement, inner tube patching rubber, rib plates and standard belt fasteners and accessories, together with rags and gasoline for cleaning. As each belt is installed, remnants should be saved, because they will prove useful in subsequent repairs.

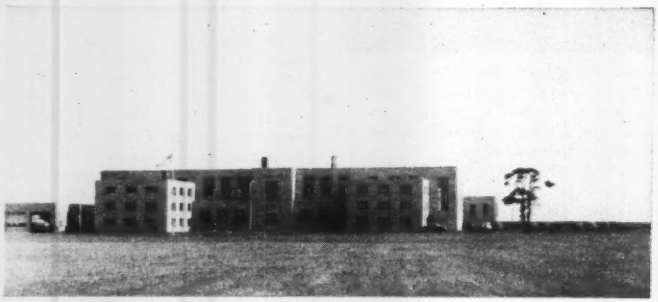
To mend long and deep cuts which go through to the fabric, open the cut, clean out all dirt, and cement the cut closed, allowing the cement to dry thoroughly before the belt is restored to service. Where bits of torn cover leave exposed spots with only slight damage to the fabric, remove the loose ears of cover stock by careful cutting a curved and bevel-edged area around the spot; then sand the edges, apply the patch flush with the belt cover.

Where gouges have penetrated the belt, or longitudinal rips have occurred, these points must be cleaned, sanded, cemented and reinforced with rip plates at three-inch intervals. Transverse rips require similar treatment with standard belt fasteners instead of rip plates. Use rip plates on longitudinal rips only, and standard fasteners on transverse rips only.

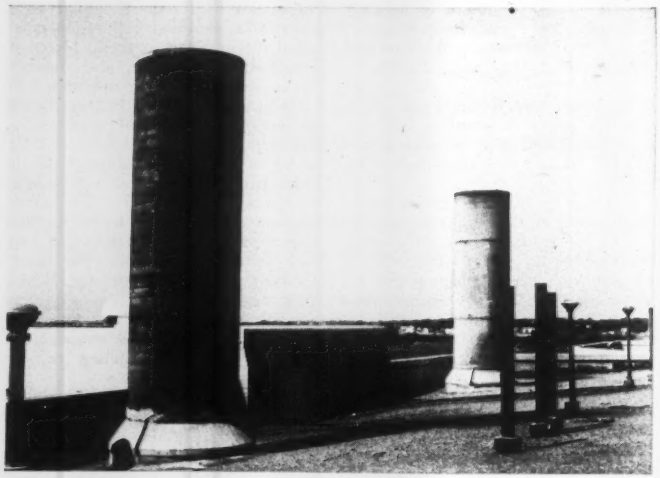
When holes in the belting do not permit the simple use of rip plates and fasteners, cut out the hole into the smallest possible rectangle with its sides parallel to and at right angles to the belt edges. Then, from belting remnants, cut an exact fit for the hole and insert the piece, fastening it with belt fasteners all around the patch. Cement all edges thoroughly. Where it is necessary to prevent seepage of fines through belt repairs, remove one ply of fabric from a belt remnant and place it under the fasteners and rip plates.

Vulcanized patches are superior to those described above, but require the addition of a portable vulcanizer, but only very large users of conveyor belting will find it economical to vulcanize their own belt patches and splices.

On an unusually ample site . . .



In a building whose appearance masks its function . . .



A smokeless incinerator fires up

The new look in

IT isn't every incinerator roof that can be shown off, spotlessly clean, after many weeks of shake-down operation. Nor is every incinerator constantly mistaken for a school, hospital or park headquarters—as is the $2½ million Hempstead, L. I., plant. This incinerator is different (ENR June 15, 1950, p 29). It has:

- A 167-acre site that assures over 30 years of convenient, backyard landfilling with furnace residue.
- Twin, straight-line refuse handling operations are built to provide for the speedy run-through of collection vehicles.
- No towering chimneys—just two induced-draft steel stacks extending only 12 ft above parapet.
- Cyclonic fly-ash collectors, new to incinerator application, that trap 90% of particles down to 15-micron size, and an electronic alarm that sounds if they don't.
- Ultimate steam-power capacity of 6,000 kw. Present installation equipment develops 2,000 kw in two turbogenerators.

• **Business already booms**—Hempstead Township is big—one of only three townships in all suburban New York's booming Nassau County. Population was a problem back in 1948 when Consultant Henry W. Taylor had to figure an incinerator size that would be sufficient to serve the 125-sq mi refuse disposal district.

He modestly says it was "luck, not navigation" that helped him hit within a few thousand of the 1950 census figure. And he hopes his figure of just over half a million for 1970 will be pretty close; that's what the 700-ton per day plant is designed to serve with its four burning units.

Trucks from individual villages, sanitary districts, and private hauling firms already flock to the new Town of Hempstead plant for speedy weigh-in and fast dumping time.

The plant is on the outskirts of the Village of Merrick. This location means some over-long haul distances for the more remote collection districts. A few vehicles travel nearly 12 miles to the incinerator, almost twice the economic limit. To overcome this present disadvantage, two transfer stations could be built in northern corners of the township. Collectors then could truck to these by day; big semi-trailers haul from them, to the incinerator, by night.

incinerators

• **No eyesores allowed**—The incinerator sits right alongside Meadowbrook Parkway, a Jones Beach-bound leg of Long Island's parkway network. Its site adjoins parkway property for some 5,400 ft. Some planting has been done that will in the future screen the site from the parkway. Ash and collapsed-can residue will be packed to a 6-ft depth over an area which is now useless, marshy meadow just a few feet above high tide.

A 36-in. cooling water intake extends under the parkway and into a dredged inlet. This salt water for the condensers is boosted by any combination of four 3,000-gpm centrifugal pumps behind a traveling screen in the pump house. Used cooling water discharges through a 36-in. outfall after use, back into another man-made inlet on the plant's far side.

Excess steam produced by the plant is available for other town uses. Taylor is a strong proponent of steam (rather than fertilizer or food) as the most economical product obtained from refuse.

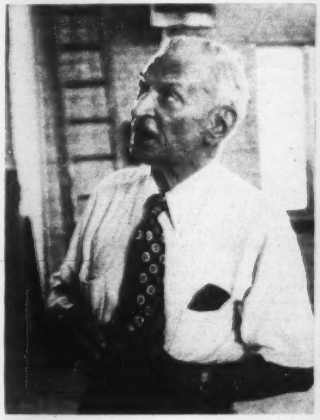
Drinking water and boiler feed make-up come from the plant's well. It has its own sewage disposal plant—a septic tank and tile fields.

Fly-ash trapped in the boiler hoppers and fly-ash arresters is drawn continuously down into water-filled tanks in the plant's basement and hydraulically handled in suspension from there to a disposal lagoon.

Wetted furnace residue comes up from the plant's basement on two scrapper conveyors sloped at 45 deg. Each of these parallel flights discharges onto a non-rigid bar screen that deflects cans into one hopper while ashes pass through to another. Both of these hoppers, for each conveyor, are high enough above grade at the back of the plant so that an ash truck can drive right underneath for loading.

About half the volume of furnace residue is cans. And their volume is considerably decreased in the fill as a dozer runs back and forth levelling and crushing them.

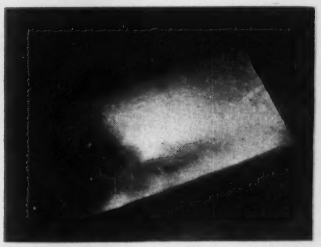
Hendrickson Bros., Inc., of Valley Stream, N. Y., were general contractors on building construction. Morse Boulger Destructor Co. was given the contract for installation of furnace and boiler equipment. Henry W. Taylor's office reported on and designed the project, supervised construction and supervises operation.



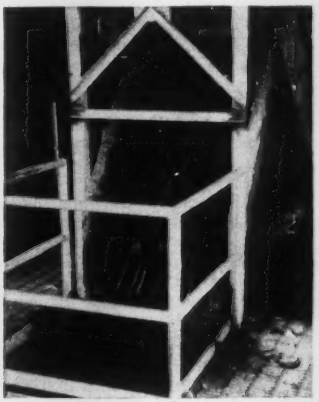
DESIGNER EXPLAINS—Henry W. Taylor tells how it works. Plant is designed for 30-year operation.

TRUCKS DUMP in enclosed tipping rooms from platforms overhanging pits. Hydraulic trailer-dumps are installed.

SINGLE-LINE BUCKET, on crane remotely controlled from transparent plastic "pulpit" on charging floor hoists 3 cu yd to the furnace feeding hoppers.



HOPPER EMPTIES through a 25-sq ft charging gate into one of four furnaces as operator on floor below operates air valve.



BAR SCREEN SORTS cans and "tramp metal" from ashes as furnace residue comes off conveyor from basement and drops into elevated hoppers.

CONTINUAL GOOD WEATHER will be maintained at this shopping center.

Weather-proof shopping center planned for Minneapolis area

A $10-million shopping and residential center, the first of several expected to ring the metropolitan area, is being planned by the Dayton Co. of Minneapolis, one of the largest department stores in the Northwest, on 500 acres of land in the suburbs of Edina and Richfield, just southwest of Minneapolis.

The project will be handled by a separately-organized company known as Southdale Center, Inc., and will include a $7-million shopping center and an adjacent $3-million residential area, according to Donald C. Dayton, president of the Dayton Co.

The 500 acres have been acquired either by outright purchase or option at a cost of more than $1 million.

The Edina village council already has voted to change its zoning ordinances, switching the area from residential to a community store zone. The project is expected to be completed by May, 1955.

Victor Gruen, architect, designed the project which will include:

- A two-story branch store for the Dayton Co., occupying 175,000 sq. ft. of the shopping center's projected total of 600,000 sq. ft.
- Construction of 50 stores and shops on two levels for other concerns—almost every one of which will be competitive to Dayton's "in keeping with a policy that shoppers have every opportunity for selection of articles," the sponsors said.
- Parking facilities for 4,000 cars on a split-level set-up to permit patrons to enter the center on either the first or second floor.
- A "perpetual spring" garden court, with a constant 70-degree temperature, which would inter-connect with the shopping center.
- Two-story garden-apartment buildings and single dwellings for 2,200 persons. The residential area, according to plans, will be sold to real estate firms which would handle its development.
- A school, park, playground, office building, medical center, restaurant, auditorium, amusement center, nursery, service station and fire station also will be built.

• **New concept**—Gruen said the project contains a "revolutionary concept" in that the shopping center will be in the interior of the acreage, away from public thoroughfares by at least 600 ft. Its own street plan will serve as a buffer between the commercial and residential areas thus permitting it to develop its own traffic pattern without congesting the public streets.

The project will have its own water, sewage disposal, transportation, fire and police protection services, Dayton said. He explained that his firm was moving out to the perimeter of the community so as to accommodate the normal growth of the city and, at the same time, make shopping and parking more convenient for families in the suburban areas.

"This is the first step in a long-range program to give the Minneapolis metropolitan area several integrated shopping areas such as this," Dayton said.

Pointing to the nationwide trend of the city-to-suburbs, Gruen said that suburban growth is the responsibility of businessmen who must undertake it in an organized manner.

"The pressure has to be taken off the downtown to enable it to be the main commercial, cultural and business center of the city," he declared. "Projects such as this will provide 'crystallization points' in their areas where people meet their friends, attend club meetings and civic doings."

• **Court**—The proposed garden court is expected to be the most novel feature for the shopper. The court will be scientifically lighted, heated in winter and air-conditioned in summer. Completely glass-enclosed, it will give the illusion of being outdoors. Streets and walks will be lined with trees, lawns, newspaper stands and other facilities.

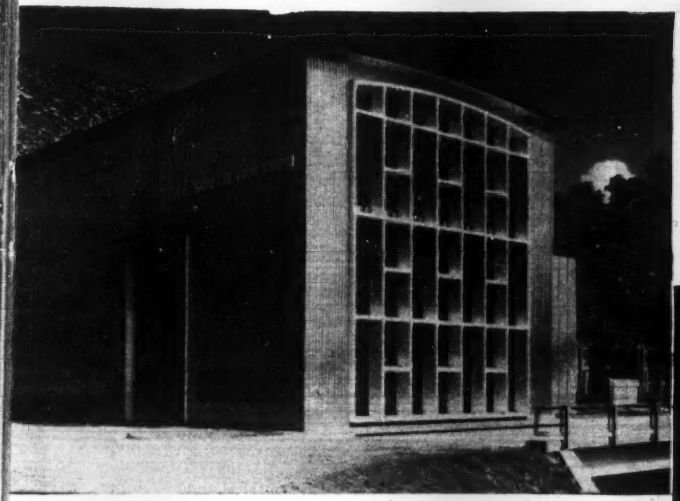
Trucks supplying the center will move on separate streets which will take them underground to docks for the various commercial shops in the center.

As a forerunner to the project, the Dayton Co. retained Larry Smith Co., real estate consultants of Seattle, Wash., to make an economic survey of Minneapolis. The study showed that the project would serve residents from Richfield, Edina, Bloomington, Morningside, Hopkins and St. Louis Park, all Minneapolis suburbs, as well as a part of South Minneapolis.

• **Planning**—As part of his planning, Gruen studied Minnesota weather and found that there are only 126 days of "ideal shopping" weather in an average year.

"We plan to make our own weather in Southdale," the designer said. "By means of special heating, lighting and air-conditioning, the weather in the center will be 'fair and mild' every day in the year, with temperatures maintained at 70 degrees, regardless of conditions outside.

"The central garden court, with grass, trees and flowers growing year around, will give the impression of June even in January."



Two views of the South Holston Dam Powerhouse, Bristol, Tenn.
Designed by Tennessee Valley Authority, Design Department.
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The great number of Q-Panel electric power stations, from coast to coast and in many other countries, now under construction witness to the superiority of this wall material for power plants. Q-Panels fill the bill so well, they are rapidly becoming the typical traditional material.

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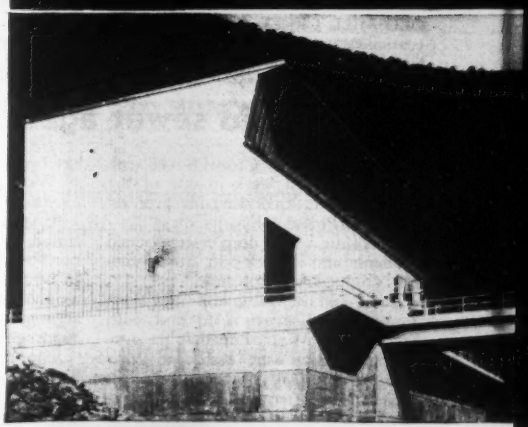

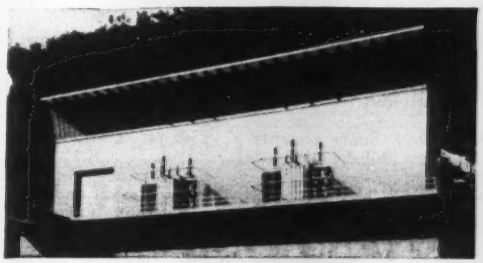

Watauga Dam Powerhouse
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OLD MILL CREEK CAVE-IN. An automobile is hauled out of the cave-in after continuous weekend rains flooded the creek's sewer. Porches on three houses also fell into the hole. (Wide World)

80-year-old sewer again collapses

The Old Mill Creek Sewer collapsed again last week in one of the most massive street cave-ins ever recorded in Philadelphia.

This time a 35-ft deep crater opened suddenly and a truck and an automobile dropped into the hole.

Some 300 occupants of homes along Sansom St. between 43rd and 44th Sts. in the West Philadelphia residential district were forced to leave and possibly 150 of them will lose their homes permanently. Foundations of a score of buildings have been undermined.

The collapse came without warning and was the second in the block within a year.

The city has spent more than $2 million in recent years repairing cave-ins.

Old Mill Creek Sewer presents a real problem to Philadelphia's engineers. The crux of the problem is that the sewer was built more than 80 years ago and is not capable of sustaining heavy modern traffic loads.

• **Other collapses**—The crusty, rotting brick and masonry sewer which rises in East Narberth in adjoining Montgomery county and flows deep under miles of city area over a twisting route has been ripping away huge sections of West Philadelphia for more than 25 years.

Another recent major collapse occurred on July 23, 1951, when a section of 43rd St. south of Walnut collapsed, plunging a brand new automobile into the pit and forcing evacuation of tenants from seven nearby apartment houses.

The most serious accident occurred Sept. 22, 1931, when a man lost his life when his home and another building adjoining it collapsed. Thirteen other persons were injured in that cave-in.

On Jan. 4, 1930, five workmen were injured when a section caved in at 43rd St. and Woodland Ave.

On Aug. 31, 1932, two men were hurt when their truck dropped into a 35-ft pit at 43rd and Walnut Sts.

• **Mill Creek Sewer**—The sewer is a storm conduit draining the northwest part of West Philadelphia. It was built in 1870 and follows the course of Old Mill Creek which still flows in the sewer. The sewer passes under many highly traveled streets and intersections, emptying into the Schuylkill River.

The sewer is of brick and masonry construction. It increases in diameter from 7½ ft at its start to 20 ft under Sansom St. at the point of the recent collapse.

Max Barofsky, Deputy Commissioner of Water, pointed out that it was built before anyone dreamed of the heavy traffic stresses.

From time to time the city has replaced sections of the sewer with reinforced concrete, usually at the scene of the breaks.

The old sewer varies in thickness from 13 to 21 in. The new sections are from 16 to 38 in. thick, designed to carry more load.

City officials privately say little can be done about the situation because of the nature of the initial construction of the sewer. While they regret the danger attached to the periodic collapses they point out that all they can do is to continue putting in reinforced sections along the route of the old creek where cave-ins occur.

City officials say that few municipalities have such a problem. The sewer winds in and about for miles through heavily populated residential districts. The cost of replacing it in its entirety would be astronomical, the officials say.

Sewage pump change to save city $500,000

The city of Nashville, Tenn., is studying a change in plans for its proposed $11-million sewage plant that could save up to $500,000, Warren A. Coolidge, city director of public works, said last month.

The tentative change involves switching to a new system of more efficient pumps.

If the new pumps can be used in the Nashville plant, Coolidge said, it would change the basic design of the pumping station and thus bring about a saving in construction costs.

He said he will go to Boston to inspect the Boston sewage disposal system, which uses the new type of pump. Consulting engineers also will be asked to determine whether the change can be made effectively in the Nashville plant.

The proposed pumping station will be on the state prison farm near the Cumberland River.

The station must be capable of pumping between 5 and 120 mgd up an 80-ft lift. The collector sewers are 80-ft deep in order to drain the sewerage system.

The new pumps, which operate with a magnetic control, are designed to function efficiently at between 30% and 100% of capacity.

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Busy Thoroughfares require SCHRAMMS!

Here, on the job, is a Model 315 Schramm Air Compressor supplying air to six paving breakers on contract for removal of old macadam on northbound lane of West Side Circumferential Highway in New York City, replacing with concrete. Time was of the essence in completing the job. The highway is one of two major links for getting into and around Manhattan, and handles much traffic. You can always depend on Schramm air compressors when working against time.

Whatever your air needs, there's a Schramm model to supply you with all the air you want, economically, quickly, easily.

Write for Bulletins SPB-51 and STB-51 for complete information on tools and compressors.

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ROCK DRILLS		CLAY SPADES
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SCHRAMM, INC.
The Compressor People
WEST CHESTER · PENNSYLVANIA

SCHRAMM AIR COMPRESSORS

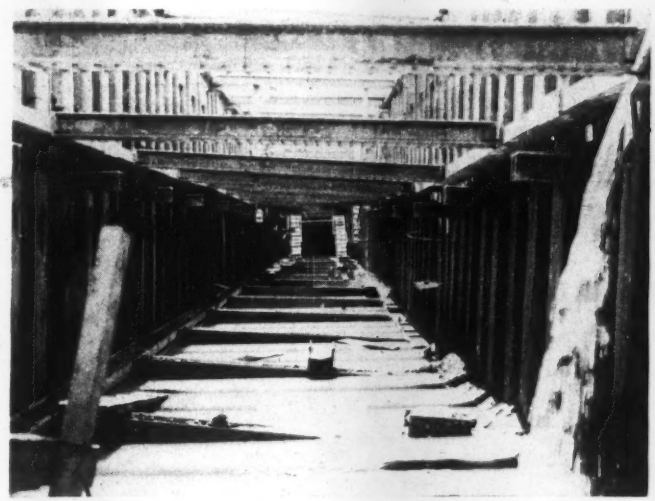
TO RAISE 94,000-TON BUILDING—This famous building, the Palace of Fine Arts, has settled 80 in. below its original level; Manuel Arizmendi proposes to raise it by hydraulic jacks, on a new concrete-mat foundation.

Problems of a sinking city

Steady settlement of the clay subsoil of Mexico City is creating some enormous problems for Mexican engineers, particularly those who are responsible for the city's sewerage system and some of its principal structures.

The sewer problem, briefly, is that collecting pipes have sunk below the level of an outlet canal and a tunnel, which carry drainage out of the city. It is said that since that system was first laid down the level of the central part of the city probably has sunk between 15 and 20 ft.

Because sewers no longer drain into the Grand Canal, Eduardo Molina, chief engineer of the Federal District, has worked out these temporary solutions:



SEWER SUMP—Construction progress is shown on a sump that will take water from a collector where it joins Mexico City's main drainage canal. At each such point two axial pumps, capable of boosting 16,000 gpm, will be installed.

Specify

TAPECOAT*

The Original Coal Tar Tape Protection for Pipe, Pipe Joints, Couplings and Tanks

TAPECOAT provides time-tested protection against severe corrosion on gas, oil, water and air piping and on pipe joints, couplings and tanks. It is resistant to moisture, acids and alkalis underground, and is equally dependable against moisture, chemical fumes and other severe conditions above ground. It reduces maintenance, cuts pipe replacement cost—as proved in 11 years of service to industry.

TAPECOAT is easily, quickly applied with use of a torch to bleed the coating, for a perfect bond. It is wrapped spirally or "cigarette-wrapped."

TAPECOAT is sized to the job. It comes in widths of 2", 3", 4", 6", 18" and 24".

Write for details and prices.

*Reg. U. S. Pat. Off.

The TAPECOAT Company

Originators of Coal Tar Tape Protection

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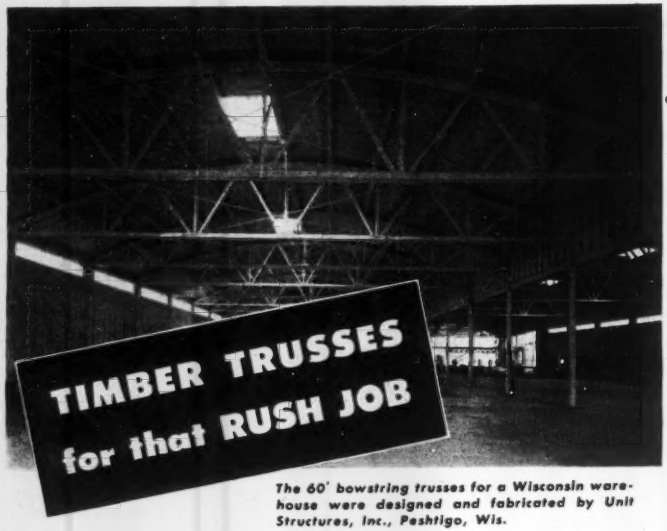


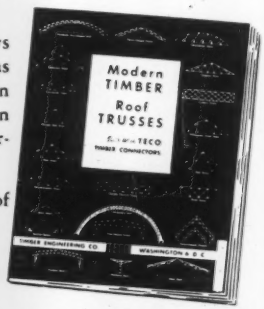
The 60' bowstring trusses for a Wisconsin warehouse were designed and fabricated by Unit Structures, Inc., Peshtigo, Wis.

Now in these emergency times timber construction is going ahead on early delivery schedules.

The widespread recognition of timber as an engineering material has given the building industry a new tool in this easily worked, versatile material.

Hangars and garages are being built with timber. So are warehouses, factories and other large structures. Heavy timber construction buildings, equipped completely with approved sprinkler protection, have shown a remarkable record of fire safety over many years.

The building profession now knows that, pound for pound, timber does as much work as other materials, and in its proper fields of use performs an equally satisfactory service, and generally at lower cost.



Timber fabricators in all sections of the country are ready to help you.

Specify timber — there's plenty of it and ready as usual for early delivery.

TIMBER ENGINEERING COMPANY, 1319 - 18th St., N.W., Washington 6, D. C.

Please send FREE copy of Lank-Teco Truss bulletin and "Modern Timber Roof Trusses."

We plan to build a _____

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COMPANY _____

STREET _____ CITY _____ STATE _____

ENR

INTERNATIONAL

1. A storage lake at a lower level than the lowest interceptor is being dug near the Grand Canal.

2. Pumps are being placed at the end of each collector to boost the flow up to canal level.

Grand Canal is a 32-mile drainage conduit, which runs in a semi-circle about the city. Its discharge drains out of the Valley of Mexico through the Tequisquiac tunnel, which goes six miles through the mountains to the Salado River.

When the flow of sewage is more than the pumps can handle at 16,000 gpm, it will be diverted into the new storage reservoir, from which later it can be pumped up to Grand Canal.

This year the floods in Mexico City have been the worst in history and much damage has been caused in the business section.

A contributing factor to the drainage problem in the city is the Lerma tunnel, opened last year, which is bringing into the city about 192 cu ft of potable water per second. This places a further load on outlets.

• **Public edifice sinking**—One of the city's largest and most famous public buildings, the Palace of Fine Arts including the Opera House, started in 1907, has settled 6¾ ft below its original level. Now Manuel Arizmendi, the engineer who devised the floating foundation for the National Lottery Building, has proposed that the 94,000-ton structure, of reinforced concrete with rolled steel beams and faced in marble, be raised by hydraulic jacks.

Arizmendi's plan, which might cost $2.5 million to carry out, calls for placing new concrete-mat underpinning under the entire structure.

Sir Adam Beck station to be done 3 years early

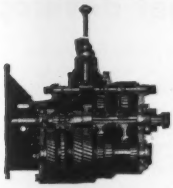
Construction of the Sir Adam Beck Station No 2 on the Canadian bank of the Niagara River gorge is being speeded up so that completion of this 900,000-kw hydroelectric power development will occur in 1956 instead of 1959 as originally planned. Work is going on night and day.

Project Engineer Gordon Mitchell estimates that construction of the power station and the eight miles of tunnels and canals which will bring water to the 295-ft drop is about 35% complete.

Additional construction may push up the project's cost from the original estimate of $314 million made about a year and a half ago to $350 million.

(International continued on page 54)

Model 5-A-620 — one of 108 available standard Fuller Heavy-Duty Transmissions and Auxiliaries.



with enough gears, you can move the world

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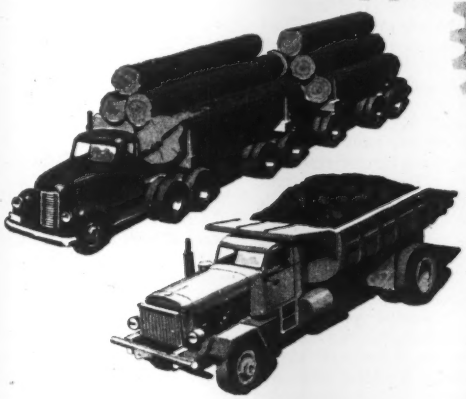
Leading designers, manufacturers, and operators of heavy-duty trucks have worked closely with the Fuller Manufacturing Company from the very beginning of this transportation miracle—helping perfect and refine more efficient, longer lived and heavy capacity transmissions to assure every truck operator exactly the right gear ratios for his particular road and load conditions.

"*Fuller Firsts*" reflect this frontrunning teamwork . . . Fuller first to perfect a trouble-free transmission for high speed diesels; first to offer a line of auxiliaries so complete that *any* requirement could be met; first to harness up to 400 hp. in a single unit transmission; first with the revolutionary ROAD RANGER® with all ten speeds shifted by *one* lever—and no gear splitting.

Get the right gear to move *your* part of the world; the Fuller line is described in the *New* Condensed Specification Folder. Ask for it.



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Weinman Pumps are engineered and built for continuous service with a minimum of upkeep and pump watching. They are available in a range of sizes that meets most industrial requirements. Weinman **UNIPUMPS** perform in almost any conceivable position and save space where floor space is at a premium. You can depend upon them because they have dependable performance built right in.

Give a lift to your fluid handling operations and put your pumping processes on a trouble-free basis. Talk to a Weinman centrifugal pump specialist.

WEINMAN **UNIPUMPS** . . . adaptable to many "built-in" applications

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REPRESENTATIVES IN PRINCIPAL CITIES

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Australia is borrowing externally for its great development needs

The International Bank for Reconstruction and Development has just made a loan of $50 million to the Commonwealth of Australia.

Two years ago the bank loaned Australia $100 million.

Why is the island continent borrowing abroad to such an extent?

The answer is the imperative need for development to improve the national economy, a development which Australia for the present is not able to finance entirely from its own resources.

Here is the background of the situation:

Australia is the only country which takes up an entire continent. Its area is about 3 million sq. mi. but its vast interior is largely arid and unproductive. In effect, Australia is a hollow continent. The majority of its population of eight and a half million live around the rim in the coastal cities such as Melbourne, Sydney, Adelaide and Brisbane.

Australia's most important agricultural activity is raising sheep and cattle for wool and meat. Its mineral resources include iron ore, coal, lead, zinc, silver and gold.

The government has recognized the importance of expanding the basic industries and services to keep up with the growth of population. The states, with the help of the commonwealth government, are carrying out programs of modernization and expansion of railways, roads and electric power. Part of the present external loan is to be used to aid these programs. Nearly half of it will be used for coal mining, the iron and steel industry, railways, road transport, and electric power.

• **Railways and highways**—Plans for the railways include construction of new lines and the improvement of existing ones. The road transport program calls for maintenance and development of highways and the provision of vehicles, earthmoving equipment, graders, spreaders and tractors.

• **Power needs**—The program for the development of electric power capacity will provide for present needs and those of the next few years, mostly thermal plants. The bank loan will pay for imported equipment needed for power stations and transmission facilities, and for equipment for the construction of hydro-electric installations.

Australian power demand is increasing at an annual rate of 10% and the Australian government has been officially advised not to take further steps which might restrict imports of equipment for power stations or which might retard engineering projects.

The Commonwealth-State Consulative Committee on Power has recommended an expenditure of $260 million in the new financial year which started on July 1, 1952. But because of considerable difficulties in getting these funds it is not expected that the annual expenditure on power in the new financial year will exceed $70 million. The expenditure on the great Snowy River Scheme is not included in this amount. Work on Eildon Dam has been slowed by a current lack of sufficient funds. (ENR July 17, p. 80) The latest International Bank loan of $50 million is for 20 years at 4½% interest yearly.

• **Airport plans**—Proposed development and modernization of Australian airports will cost about $35 million, but because of shortage of funds, only a few of the projects will be started soon. The first stage of development of Mascot Airport (Sydney) will alone cost $20 million and the cost of extension of Essendon Airport (Melbourne) has not yet been calculated. Near Sydney the Bankstown aerodrome development will cost a minimum of $1.25 millions.

South Australia is asking for the development of the Adelaide Airport (estimated cost $5 million) and Brisbane's Eagle Farm Airport needs extensions costing $2 million. In Tasmania the first stage of the construction of a new port at Llanherne will cost $2.3 million.

Falling off in prefabs—A promising export trade in British prefabricated houses has been jeopardized by the imposition of a 27½% duty on imports of such houses to Australia, and also by the fact that the Commonwealth government has reduced by 20% its underwriting of the states' capital works programs. One of the largest British makers of prefabricated houses—made from standardized angular and tubular steel components which can be simply interlocked—lost a large contract for houses for the New South Wales government in consequence of the reduction in the Australian capital works program.

(*International continued on page 56*)

Storm sewer construction in winter weather

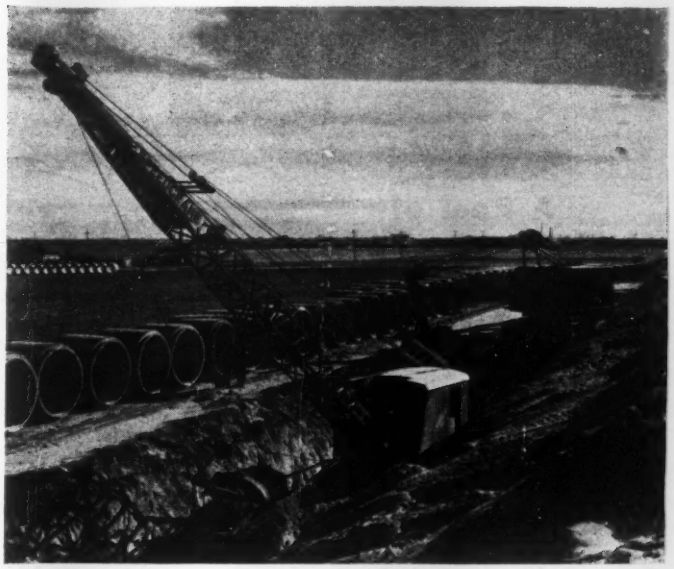
Three contractors team up "Caterpillar" equipment to push through Denver job

For a new housing development near the Denver, Colorado, Airport, two miles of deep storm sewer had to be laid during the coldest months of the past winter. Three contractors, Horn's Crane Service, Thomas Bate & Sons and C. L. Hubner Co., all of Denver, had the job. Pooling their equipment they completed the contract on schedule in spite of severe frost conditions, caving sand and high winds.

The trench was 20 feet deep, and wide enough for 72-inch lock-joint concrete pipe. It was dug by a Bucyrus-Erie Model 38B backhoe with 1¾-yard bucket and a Manitowoc Speedcrane dragline, also with 1¾-yard capacity.

A "Caterpillar" Diesel D8 Tractor and No. 8S 'Dozer, owned by C. L. Hubner Co., backfills the trench after sewer pipe is laid.

Each machine was powered by a "Cat" Diesel D13000 Engine. The backhoe was used for roughing out, while the dragline finished the trench. Another Speedcrane handled the pipe.



This photo, taken in January, 1952, shows teamwork between the Bucyrus-Erie backhoe, owned by Horn's Crane Service, and the Manitowoc Speedcrane, owned by Thomas Bate & Sons. Both units are powered by "Cat" D13000 Engines.

When it came to backfilling the trench, a "Caterpillar" Diesel D8 Tractor with a No. 8S Bulldozer did the job.

No profit in down-time

Experienced construction men know that to make money on a contract they have to keep their equipment working. Down-time for service or repairs boosts costs and cuts profit. Especially where conditions are difficult, dependable machinery pays off.

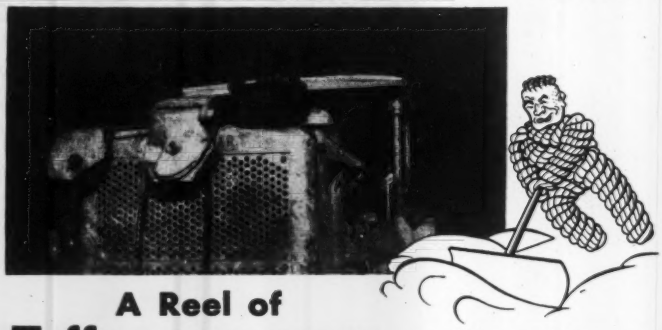
Standardizing on "Caterpillar"-powered equipment is one way to assure steady production. Every "Cat" Engine is built to deliver its full rated horsepower, and its simplicity of design contributes to long, reliable work life. Backing it up is the efficient service of a thoroughly equipped dealer organization. The "Caterpillar" line includes twelve engine sizes, ranging from 52 to 500 HP, available for original or replacement use in practically every type of excavating and earthmoving equipment. It will pay you to get the full story from your "Caterpillar" Dealer.

CATERPILLAR TRACTOR CO., PEORIA, ILLINOIS

Now...a New Tuffy

Joins the Famous Union Wire Family To Help You

CUT CONSTRUCTION COSTS *Even More!*



A Reel of Tuffy DOZER ROPE on Your Dozer

Can Save UP to 75%!

HERE'S HOW:—Until now, it has been necessary to throw away 40′ to 50′ of good rope whenever 10 feet or so have become crushed or cut on the drum. *Now, you can stop this costly waste!* Simply mount a reel of Tuffy Dozer Rope just back of the wedge socket . . . feed just enough new rope through the socket to *replace only the part that is damaged!* Tuffy ½″ Dozer Rope is now furnished in 150′ reels. Write today for simple details on how to mount Tuffy on your dozers.

These Tuffys Are TOPS in the Construction Field

Tuffy DRAGLINES Built tough—for extra flexibility, maximum abrasive resistance, easy handling, greater efficiency at high speeds or low. Easy to order—just give length, diameter and the name, "Tuffy"!

Tuffy SCRAPER ROPE Reduces material handling cost through extra yardage of dirt moved, and more days of service. And all you need to order is—Length, Diameter and "Tuffy!"

Write Today for Information

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INTERNATIONAL

Australian engineer here to discuss hydro works

Lewis R. East, Australian engineer, chairman of the Victorian State Rivers and Water Supply Commission and president of the Australian Institution of Engineers, is coming to the United States this month to attend the ASCE engineering centennial at Chicago. While here he will confer with executives of the Utah Construction Co. at San Francisco. That company is building the $27-million Eildon Dam, 80 miles from Melbourne. Mr. East will discuss progress of the work in the light of financial restrictions that have arisen since the signing of the contract with the American company. (ENR July 17, page 80)

Mr. East is on a several months' tour of America and Europe to investigate methods of administration for drainage and water works. He is planning for the large-scale drainage and irrigation schemes of his state. As a member of the joint federal-state Snowy River Commission, he helped to plan the half billion-dollar Snowy Mountains hydroelectric project now under construction in the mountainous southeastern section of Australia.

Chance for contractors in Guatemalan work

Guatemala, with a highway construction program totaling an estimated $75 million during the next five years, is considering the idea of throwing the work open to bids by foreign contractors, instead of doing it all through its highway department as at present.

Failure to obtain export permits from the United States to buy highway construction equipment has delayed many projects.

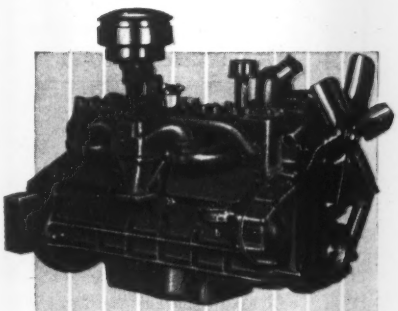
It is reported that the government has entered into an agreement with a Mexican road construction contractor to build about 19 miles of an unfinished section of the Pan American Highway near the Guatemala-Mexico border.

In the meantime, the government is spending $3,560,425 on construction work and equipment for the projected Atlantic Highway between Puerto Barrios, Carribbean port, and Guatemala City in the interior. According to a mission of the International Bank for Development and Reconstruction, the project will have cost $17 million when completed, possibly next year.

This road, for the first time, will give easy access from the sea to the interior. During the last 100 years, the only connection has been a narrow gage railroad.

Photo—Courtesy Western Land Roller Co., Hastings, Nebraska

discharges 1050 gallons of water a minute from 100 feet down!



This 8-inch Deep Well Turbine Pump is furnishing water for irrigation purposes near Hastings, Nebraska. It is powered by a Model 8-A Chrysler Industrial Engine with right angle gear drive.

This is Chrysler high speed and Chrysler high compression doing a specialized job. Other farming, construction, industrial and specialized applications are no exception to this kind of regular performance. Here are a few of the advantages you get in Chrysler Industrial Engines: superfinished wear surfaces, sodium cooled exhaust valves, updraft or downdraft carburetion—and there are many more tailored to the exact needs of your job.

Chrysler Industrial power is not expensive. Production-line methods adapted to specialized industrial engine building, provide a custom-built engine at mass production prices.

See a Chrysler Industrial Engine Dealer. Tell him your power needs. He can supply you with one of 9 Chrysler Industrial Engines for your purposes.

If your problem is special, write us direct: **Marine and Industrial Engine Division, Chrysler Corporation, 12200 E. Jefferson Ave., Detroit 31, Michigan.**

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HORSEPOWER WITH A PEDIGREE

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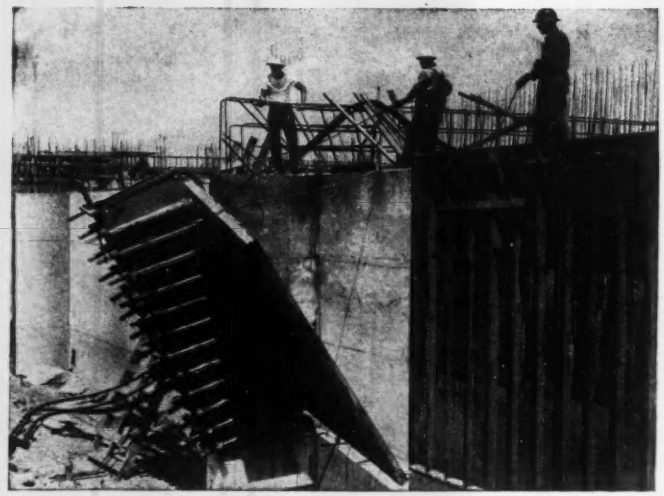


When Speed Counts–Specify Plywood Forms

WHEN THE JOB has to be done on the double, plywood concrete form panels* shave weeks off work schedules . . . cut form work application time and costs up to 25%. Plywood's every feature suits it for quick construction. It's light, tough, rigid . . . easy to work with ordinary tools. Big sheets cover large areas . . . are ideal for fabrication into cost-cutting built-up form sections. Plywood forms cut finishing time, too. Bridge, factory or apartment—plywood forms are adaptable to *every* type of concrete construction. For free catalog, write Douglas Fir Plywood Association, Tacoma 2, Washington.

Only Plywood Offers All These Advantages

- Plywood forms create smooth, fin-free surfaces
- Economical! Plywood forms can be used over and over
- Plywood forms speed work—save time and labor
- Plywood is strong, rigid—yet light, easy to handle
- Plywood forms are puncture-proof, water and mortar tight
- Plywood has superior nail and tie holding properties
- Plywood is easy to work with hand or power tools
- Plywood provides sheathing and lining in one material

Douglas Fir

Plywood

AMERICA'S BUSIEST BUILDING MATERIAL

*Several plywood grades are manufactured for concrete form work. *Interior Plyform®* is made with highly moisture-resistant glues which permit multiple re-use (up to 10 to 15 are not unusual). For maximum re-use specify *Exterior-type PlyForm®*, bonded with completely waterproof adhesives. For special architectural concrete, use Exterior or Interior plywood grades with "A" face veneer—or one of the new plastic surfaced or hardboard-faced plywood panels.

® Registered grade-trademarks of Douglas Fir Plywood Association

PANEL DISCUSSION

Plywood Forms Play Important Role in Parkmerced Project

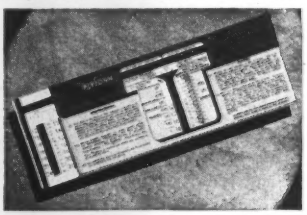
Three prime factors—re-use, speed and appearance—dictated specification and use of plywood forms for both interior and exterior concrete surfaces on the new Parkmerced apartment project, San Francisco.

According to W. A. Bender, superintendent for Starrett Bros. & Eken, Inc., contractors on the job, plywood panels gave up to 15-18 re-uses, helped speed formwork application time and construction costs by about 20 percent and produced uniformly smooth, fin-free concrete surfaces. In fact, Bender reports, plywood-formed ceiling slabs were smooth enough to be painted direct after a minimum of grinding—permitting a major savings by eliminating expensive plastering.

Large built-up form sections 11-feet high and ranging from 20 to 48-feet long, were used on the walls. Forms were built of ¾" Exterior plywood, nailed to 2x4 studs, 12", o.c., backed by 2x4 and 3x4 walers. After each pour, sections were stripped and raised to the next story. Forms were used 13 times on the eleven 13-story tower buildings, then in some cases re-used further on the two-story Colonial type apartment buildings which dot the 200-acre tract.

Parkmerced was planned and built by Metropolitan Life Insurance Co. General Contractor: Starrett Bros. & Eken, Inc. Dinwidde Construction Company was the subcontractor on concrete work. Leonard Shultze & Associates were the architects, with the firm of Thompson and Wilson serving as architectural consultants.

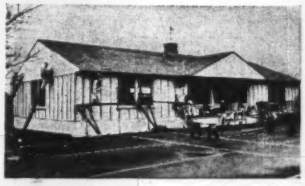
PlyForm Calculator Available



A handy slide rule calculator which gives plywood form construction data is available for $1.00 from Douglas Fir Plywood Assn., Tacoma, Wash. Included with the PlyForm calculator is a leaflet of design assumptions.

(Advertisement)

Plywood Helps Complete Rush Jobs on Schedule

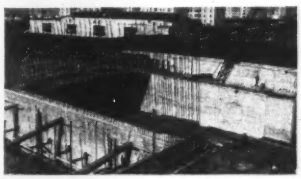


A crew of 25 men completed construction of the new Lakewood (Wash.) Branch of the Puget Sound National Bank in 10 working days to hang up what might well be a record for buildings of its kind.

The final decision to rush construction of the 2,600 sq. ft. building was made by bank officials only 18 days before job completion. Architects Lea, Pearson and Richards went to work to meet the "impossible" schedule. To give the builder every opportunity to save time, they turned to virtually all-plywood construction. Drawings and specifications were completed within a week and work was begun under the direction of O. D. Parker, building superintendent for Ketner Bros., Inc., contractors.

According to both builder and architect, plywood made possible the speed of building. The big panels were used for combined siding-sheathing, gable ends, interior paneling, roof decking and underlay floors. The plywood board and batten siding is painted barn red to contrast with white flush-surfaced gabled ends. Interior paneling is painted light green.

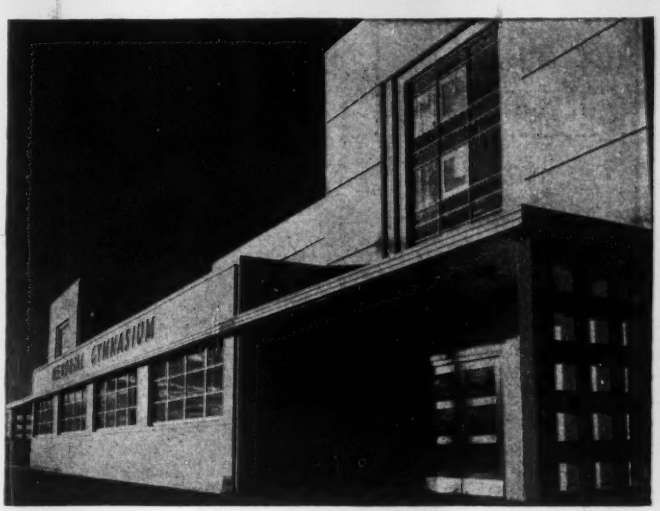
Plywood Ideal Form Material Reports Highway Builder



A typical use of plywood forms in highway projects is the six-lane Stanley Drive highway underpass in Northern California—built jointly by M and K Corporation and Eaton and Smith. The builders used ⅝" Interior PlyForm for all exposed surfaces for this half million dollar project.

"We wouldn't use anything but plywood for a job like that", says M and K Corporation President B. F. Modglin. "As far as we are concerned it is the ideal form material. It forms clean, smooth concrete, saves time and labor, and re-use cuts costs considerably."

Forms 16-feet high, 2½-feet wide at the bottom and 4-feet, 7 inches wide at the top were used for the ends of the bridge piers. Plywood was nailed across 2x4 and 4x4 studs, 12" o.c., backed by double 2x4 and 4x4 walers. Panel's for road slab were placed across 2x12 joists.



When Appearance Counts– Specify Plywood Forms

How SMOOTH can concrete be? As smooth as the material against which it's cast. That's why plywood-formed* concrete surfaces are smooth, dense, uniformly attractive. Large panel size automatically reduces fins and joints to an absolute minimum. Exact-size Douglas fir plywood concrete form panels are tough, rigid, dimensionally stable. Stark monolithic surfaces, curved surfaces, rustication lines, fluting and other special architectural design effects are also easily achieved with plywood forms. For free catalog, write Douglas Fir Plywood Association, Tacoma 2, Washington.

Only Plywood Offers All These Advantages

- Plywood forms create smooth, fin-free surfaces
- Economical! Plywood forms can be used over and over
- Plywood forms speed work—save time and labor
- Plywood is strong, rigid—yet light, easy to handle
- Plywood forms are puncture-proof, water and mortar tight
- Plywood has superior nail and tie holding properties
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*Several plywood grades are manufactured for concrete form work. Interior *Plyform*® is made with highly moisture-resistant glues which permit multiple re-use (up to 10 to 15 are not unusual). For maximum re-use specify Exterior-type *PlyForm*®, bonded with completely waterproof adhesives. For special architectural concrete, use Exterior or Interior plywood grades with "A" face veneer—or one of the new plastic surfaced or hardboard-faced plywood panels.

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Stay out of legal tangles

with this new guide to
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An engineer-lawyer reviews 83 special problems

Here is a new handy guide to avoiding or solving legal problems that contractors, architects, and engineers often face. It gives the same sort of concise review of typical problems arising out of construction contracts that made Mr. Werbin's previous book on this subject so popular.

LEGAL GUIDE for CONTRACTORS, ARCHITECTS, and ENGINEERS

Just out!

By Vernon I. Werbin

Member of the New York Bar
Licensed Professional Engineer

374 pp., $4.75

This clearly written book describes 83 situations—in the breaching and changing of contracts, and so on—situations of the sort that frequently lead to litigation, and tells how the courts viewed each case.

It is not intended to take the place of necessary legal services, but will serve to forewarn you of common pitfalls in your field—help you to take precautions to avoid costly lawsuits.

The book is written to be easily understood by laymen as well as attorneys. It gives the facts and contract provisions involved in each situation, and cites cases to sustain the principles of law set forth.

Samples of the 83 problems covered:

- **Contracts for furnishing labor and materials where the contract is silent as to the amount to be paid therefor**
- **Uncompleted work of deceased architect**
- **A contract provision that is repugnant to a right created therein is void**
- **Interpretation of subcontracts**

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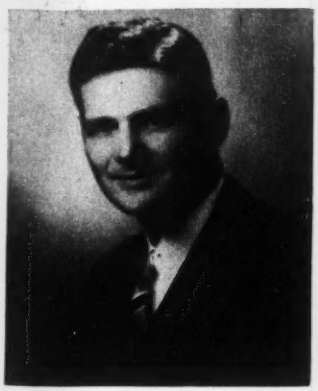


T. J. KAUER, newly appointed chief engineer of the Ohio Turnpike.

SAMUEL O. LINZELL takes Kauer's place as state highway director.

Turnpike body appoints staff heads

The Ohio Turnpike Commission appointed a new chief engineer two weeks ago and took other steps to broaden its administrative set up.

The administrative actions are expected to speed up the preliminary work on the super toll highway across northern Ohio.

The new chief engineer is T. J. Kauer, whose resignation as state highway director became effective the day before the appointment. He resigned in order to become eligible for the job.

The commission, at a special meeting, then hired its first-full-time employee—Col. Charles P. Smith—as its executive assistant. Col. Smith held the same post under Kauer in the highway department.

Kauer's place was taken by Samuel O. Linzell, state public works director. The new highway director was appointed by Governor Lausche.

• **Kauer**—The former director said goodby to his highway department staff, thanking his division chiefs for their cooperation in successfully "clearing a log jam of hundreds of plans which are presently on the shelves awaiting funds to put them into effect."

He added: "The department was instrumental in revamping the system of local government contributions to secure matching aid funds, so that these local units might derive considerably more benefit.

"The department of highways has further encouraged assistance to cities in creating master plans which are in the process of clearing severe traffic congestion and will provide safer streets for Ohio citizens.

"I can point with pride to the accomplishments of the department in completing the study of highway needs in conjunction with the Automotive Safety Foundation; the successful termination of the Maryland test road which has produced important engineering data on the effects of heavy loads upon our highways, and to the attention focused upon the department of a national nature, pertinent to the approach we had made on a problem which is plaguing the entire country.

"I am leaving the department in the hands of a capable and well recognized engineer-administrator, Sam Linzell, who will have with him the men who have made the successes of this department so outstanding."

• **Linzell**—Before accepting the position of director of public works, Linzell was chief engineer and assistant director of highways. He had been in the highway department 22 years.

Linzell attended Ohio Weslevan University and graduated from Ohio State University with an arts degree in 1921 and with an engineering degree in 1922.

Linzell is a member of the Ohio Society of Professional Engineers and is also a member of various other engineering fraternities.

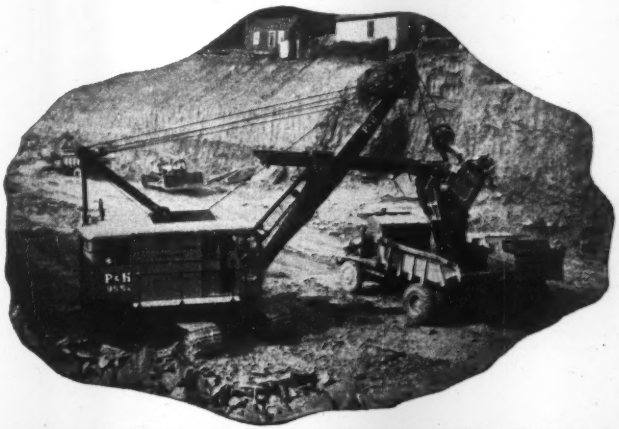
• **Col. C. P. Smith**—The new executive assistant, has been with the State

(Continued on page 63)

AND READY FOR ANY JOB

P&H MAGNETORQUE* Electric

Swing is 15% to 25% faster than any 2½ yd. shovel



If it's husky strength you want, this is it! Tough all-welded construction throughout to take pounding and shock loads that would K.O. less rugged machines. It means steady digging — less maintenance — down through the years.

If it's speed, you have it with Magnetorque — speed to out-produce any other machine in the 2½ yd. class — with a swing that's 15% to 25% faster. It's the greatest shovel improvement in 20 years. We'll gladly tell you where to see the 955-A working nearest you. Ask today!

If you want larger capacity, ask for facts about the Model 1055 (3½ yd.).

*T.M. of Harnischfeger Corporation for electro-magnetic type clutch.

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WOOD TIMBERS

...offer strength plus endurance

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PROTECTED

In the history of bridge building and other heavy construction, wood has long been the choice of materials because of its strength and toughness, its workability and economy. Today you specify PENTA treated wood timbers with the assurance that this modern wood preservative will protect the good structural qualities of these timbers for longer and more durable service without sacrificing workability.

Pressure treating with PENTA provides wood with clean protection against termites and decay . . . protects permanently, too, since PENTA will not leach or evaporate. Over 40 commercial treating plants located all over the country supply PENTA pressure treated wood to your specifications.

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highway department for 26 years, the last 15 months as executive secretary and liaison man to the turnpike commission.

During the war Smith was a strategic planner on the War Department general staff.

Smith was graduated in 1929 from Ohio State University's College of Engineering. He is a member of various professional engineering societies.

The commission also hired C. W. Hartford as chief of the right-of-way section. He was formerly chief engineer in the division of right-of-way for the state highway department.

Omaha district high post to much-decorated officer

Col. Hubert S. Miller, described as "one of the most decorated combat officers in the Corps of Engineers," became Omaha District chief of Army Engineers on Aug. 14.

He succeeded Col. Henry J. Hoeffer, who has been assigned to the command of the 354th Engineer Combat Group at Fort Lewis, Wash.

Save for a year's service with the Munitions Board at Washington, Col. Miller for the last seven years has been with United States forces in Austria, where he was in charge of all construction. His combat background includes service with the First and Ninth Armies in Belgium, France and Germany during World War II.

During Col. Hoeffer's tenure, substantial progress was made on Pick-Sloan Plan projects in the Omaha district. The Fort Randall Dam was brought to closure stage, work was started on Oahe Dam proper and Gavins Point Dam work was begun. In addition he had charge of military construction costing more than $200 million.

34-man committee appointed by chamber

The chamber of commerce of the United States last week announced the appointment of a 34-man construction civic development committee for 1952-53, headed by Norman P. Mason, treasurer of the Wm. P. Proctor Co., North Chelmsford, Mass.

The committee includes five chamber directors and representatives of all segments of the building industry from every section of the country.

During the year, the committee will consider such subjects as major factors affecting construction markets, government control of materials, credit and rents, and the planning of private and public construction projects.

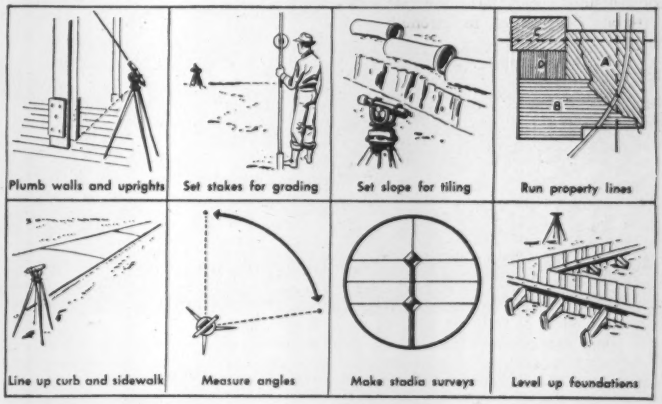
(*Men & Jobs continued on page 66*)

White Universal Level-Transit . . .

the most versatile instrument you can own!

Yes, the White "Universal" Level-Transit is the most practical, complete instrument on the market. Now available in a new improved model — the No. 3000 — with internal focusing, coated optics, guarded vertical arc. In fact, every feature to assure you lifetime durability and accuracy. And the price is *only $185**, complete with tripod. See your dealer, or write DAVID WHITE COMPANY, 315 W. Court St., Milwaukee 12, Wis.

INDISPENSABLE FOR THESE JOBS—AND MANY MORE—



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We offer the most expert REPAIR SERVICE on all makes, all types of instruments.

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"Dirt-movin'est tractor I ever saw!"

BIG RED CHAMPS! The TD-24s with 148 drawbar horsepower do more work per day—they have more horsepower and speed than any other crawler on the market. And they have Planet Power Steering, for pivot-turns, feathered-turns or turns with power on both tracks!

Big Red TD-24s distinguish themselves building levees to control Missouri River

Near St. Charles on the Missouri River, the levees failed against the flood of '51. But Paul Crawley rebuilt them so they stood firm against the worst the river could do in 1952.

Crawley's contract called for moving 940,000 cubic yards of dirt. A big job, a tough job, in the bitter dead of winter. And for Crawley's money, the International TD-24s proved to be real Champs.

"They're the dirt-movin'est tractors I ever saw," he reports. "There's no other crawler to compare with 'em for daily work production!

"They climbed the levee with full loads with no special ramps of any sort. They'd dump their loads, turn around on the 8-foot crown and go back down for another load. It was work that called for superior power and steering, and my TD-24s had it!"

Get the low-down on TD-24 performance from your International Industrial Distributor. You'll be a TD-24 man yourself from then on in!

INTERNATIONAL HARVESTER COMPANY
CHICAGO 1, ILLINOIS

GOVERNMENT INSPECTOR, George Lemp, talks it over with prime contractor Paul Crawley (right).

CRAWLEY'S CRAWLERS did the job in a sea of winter mud that froze from time to time.

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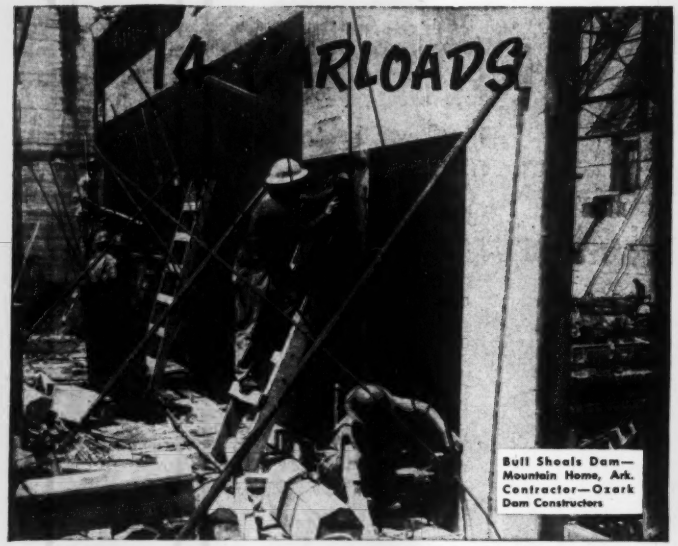
POWER THAT PAYS



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Saves Big Dollars on the Big Jobs!

At Bull Shoals it was only natural for the builder to use Masonite Concrete Form Presdwood®—*to the tune of 14 carloads.* These super-smooth, all-wood panels leave no wood-grain impression. They can't—they have no grain or knots. Virtually eliminate time-consuming, labor-wasting hand rubbing.

Here's what the Contractor Says:

OZARK DAM CONSTRUCTORS
BUILDERS OF
BULL SHOALS DAM AND POWERHOUSE
MOUNTAIN HOME, ARK.

December 13, 1951.

Masonite Corporation,
111 West Washington St.,
Chicago, Illinois.

Att: Mr. T. D. Gaskin.

Gentlemen:

We have used fourteen (14) carloads of Masonite Concrete Form Presdwood during the construction of Bull Shoals Dam and Powerhouse.

This will give you some idea of how well satisfied we are with your product. And I want to thank you for the prompt and efficient way you have handled our orders.

Very truly yours,
OZARK DAM CONSTRUCTORS.
W. H. Sloan,
Project Superintendent.

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Consider how much you'd save on a form liner that—

- **Insures complete, uniform hydration.**
- **Saves form lumber costs.**
- **Easily worked with ordinary carpentry tools.**
- **Can be curved for arches, columns, etc.**
- **Can be used again and again.**
- **Won't split, splinter, or crack.**
- **Comes in large, accurately cut panels, 4' x 12'.**
- **Reduces joints to a minimum.**

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Better Hardboards for Better Concrete

FRED B. SEELY, Professor of Mechanics at University of Illinois, retiring Sept. 1.

Mechanics department head to retire at Illinois

Fred B. Seely, head of the department of theoretical and applied mechanics, University of Illinois, since 1934 and a member of that department since 1909, will retire as of September 1, 1952.

He will be succeeded as head of the department by W. C. Huntington, head of the department of civil engineering, who will serve as acting head of the mechanics department in addition to his regular duties as department head.

Seely was born in Chester, N. Y., in 1884. He secured his bachelor's degree from Worcester Polytechnic Institute in 1907 and his master of science degree from the University of Illinois in 1915.

Seely (with N. E. Ensign) is the author of "Analytical Mechanics for Engineers."

Through the years, Seely has made contributions to engineering literature. He has written on the flow of water through pipes, air vents in steel pipe lines, fatiguing of materials, the mechanics of gyroscopes and acceleration.

He has received the Worcester Reed Warner medal from the American Society of Mechanical Engineers, and the Lamme Award, one of the highest awards in engineering education, from the American Society of Engineering Education.

He is a member of numerous professional, scientific and engineering societies.

(*Men & Jobs continued on page 69*)

in WIRE ROPE, too, longer life depends on the RIGHT KIND of muscle

Massive, muscular structure gives the elephant the overpowering strength he needs to ward off the attacks of predatory enemies. Even in a hostile environment, these huge animals may stretch out their life span to well over a hundred years.

In wire rope, too, prolonged life is dependent on specialized muscles that will give best resistance to the destructive forces encountered... whether they be abrasion, bending fatigue, load strain or shock stress. That is why in Wickwire Rope we make sure that you get the right grade of steel and size of wire... the right construction and lay of the rope... in short, the right kind of muscle for your particular job.

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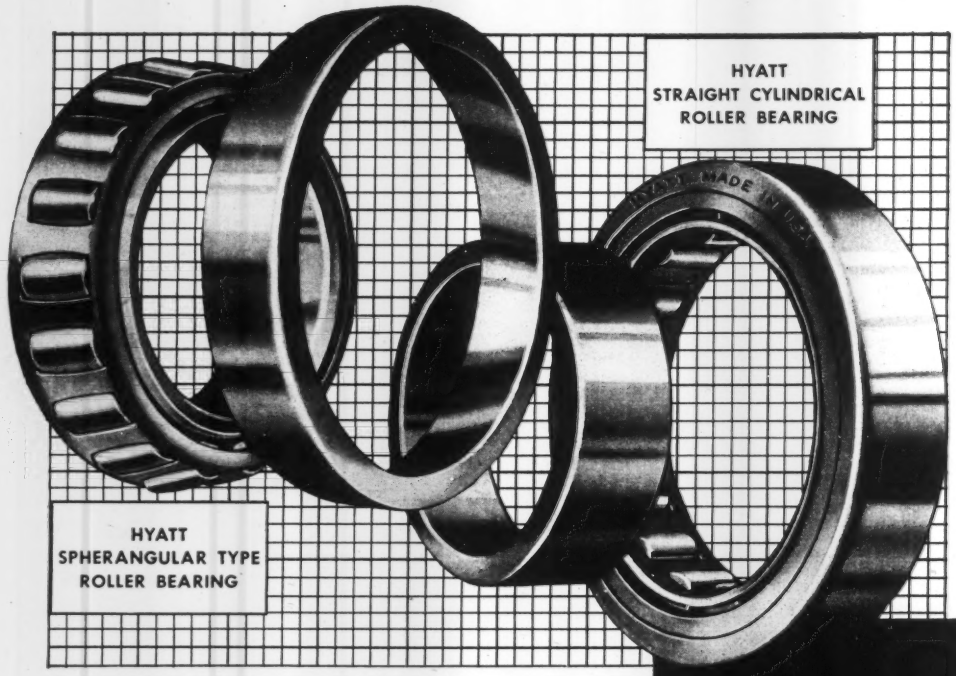
A YELLOW TRIANGLE ON THE REEL IDENTIFIES WICKWIRE ROPE



We've learned a lot about roller bearings and their application during the past sixty years.

Working together with many equipment builders in many industries, we have studied and solved a good number of problems in product design and bearing application.

Out of this continuing interchange of ideas, we have accumulated a great fund of engineering knowledge. As a result, many apparently difficult problems in bearing application quickly lend themselves to simple, practical solutions that are born of experience.

Why not take advantage of Hyatt experience? If the equipment you build or use operates on anti-friction bearings, you may be able to save yourself time and money.

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A fund of HYATT experience is yours to use

HYATT ROLLER BEARINGS

Morhouse named to top post of national roads group

L. Judson Morhouse, executive director of the New York Good Roads Association, has been named chairman of the National Good Roads Association, a newly-formed organization of statewide associations representing public interest in good roads.

The announcement was made last week in Washington, D. C., at the first meeting of the national group which has been established to provide a bridge between state and national efforts to solve highway problems.

Morhouse has been interested in highway progress in New York State for many years. Prior to his appointment as executive director of New York Good Roads Association, Morhouse was in the state assembly for six years and much of this time was spent on matters pertaining to roads.

Under his direction, the New York Good Roads Association has been instrumental in bringing about the largest highway program in the history of the state in 1952, and backed the state legislature in the establishment of the temporary Highway Finance Planning Commission which is conducting a survey on the highway situation in the state. Last year, the association aided in the passage of Amendment No. 4 which gave the state power to issue bonds for financing the New York State Thruway. Headquarters will be in Albany, N. Y.

Careers . . .

• **Appointed—Gerald E. Arnold** and **Max Barofsky** have been named to new posts as deputy commissioners of the Philadelphia Water Department. Arnold, recently director of the water resources division of the National Production Authority, will be in charge of water operations. Barofsky, a longtime emplove of the former Department of Public Works will handle the sewer operations bureau. . . As construction engineer of the $40-million Solano Reclamation project in California, **Bernard P. Bellport** will supervise building of Monticello Dam, Putnah diversion dam, Putnah South Canal, two wasteways and holding reservoirs. . . **Charles S. Hale** will be acting project engineer on the second barrel of the San Diego aqueduct with headquarters at Escondido, Calif.

As a representative of the Army Department, **Col. William W. Carlton,** Cincinnati, will accompany members of the U. S. Senate Armed Services Committee on a tour of overseas air bases in the Arctic, Europe, Africa and

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Safe and economical solution to foundation problems . . .

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● The FRANKI DISPLACEMENT CAISSON, a pressure injected pier or spread footing, compacts the soil—ELIMINATES EXCAVATION—creating a highly compressed zone of soil surrounding the footing.

In soils with elastic qualities such as, sands, gravels, or hard clays (or where such a layer can be reached) an unequaled bearing capacity is provided—single caisson loads in excess of 100 tons are common. Full advantage can be taken of the depth factor. Standard soil boring information provides data for ready design. Caisson can be readily installed to depths of 60 feet. They have been used successfully in 36 countries under a wide variety of structures and conditions.

If you are contemplating *spread footings, piling,* or *excavated caissons,* it will pay you to investigate the advantages of FRANKI DISPLACEMENT CAISSONS.

Write for information about existing installations, methods and tests.

A Franki Displacement Caisson which has been dug out to show the enlarged base and 21" diameter shaft formed by ramming concrete into the soil.

FRANKI FOUNDATION COMPANY

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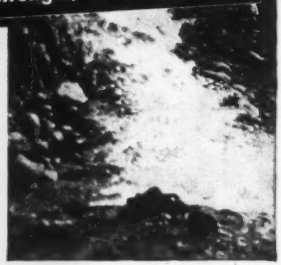
A Jaeger never races to prime

Pump longer because they pull stronger, at easy speeds

Dewatering 1500' of 8' x 14' deep sewer trench at a river crossing, this 4" Jaeger pump handled 40,000 gph at average speed of only 1200 rpm (10% to 15% lower speed than other pumps), and reprimed quickly, as needed, at 1400 rpm (compared with 1800 to 2000 rpm required to prime ordinary pumps). This is typical performance. Jaeger's larger shells and impellers, double priming action and use of largest engines applicable mean high efficiency, fuel economy, long life—in 1½" to 10" pumps.



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COMPRESSORS • MIXERS • HOISTS • TOWERS • PAVING MACHINERY

MEN AND JOBS

the Middle East. . . **Robert B. Jenkinson** has taken over as project engineer at Folsom Dam, Calif., succeeding **Fred E. Geis, Jr.,** who retired July 31. . . . **Lieut. Col. H. G. Dewey, Jr.,** recently discharged from active military service, has returned to his former civilian assignment as chief of the Mississippi Basin Model Branch of the U.S. Waterway Experiment Station's Jackson, Miss., sub-office. . . **Arthur E. Hassler** and **Robert S. Sisti** have joined the firm of Scrop S. Nersesian Associates, Hackensack, N. J., consulting engineers. . . **Albert T. Simpson** and **James L. Stratta** have opened consulting engineering offices in San Francisco. . . **Arthur B. Smith, Jr.,** has established an office in San Francisco for the practice of structural engineering.

• **Elected—Rod M. Richardson** of New Brunswick, is the new president of the Dominion Council of Professional Engineers which represents more than 35,000 Canadian professional engineers.

• **Honored—Dr. Mario G. Salvadori,** associate professor of civil engineering at Columbia University School of Engineering, and **Harold R. Henry,** research associate at Columbia, will be honored by the American Society of Civil Engineers in Chicago as part of the society's Centennial Convocation. Professor Salvadori, internationally-known for his work in applied mathematics, will receive the Moisseif award for a paper on "Numerical Computations of Buckling Loads by Finite Differences." Henry, a candidate for the Ph.D. degree in civil engineering, will receive the J. C. Stevens award for a paper in the hydraulics field.

• **Resigned—William A. Johnson** has relinquished the presidency of the American Pipe and Construction Co., Los Angeles, to Howard H. Jenkins, former executive vice president. Johnson will retain his position as Chairman of the board. Among other executives moved up is **Robert V. Edwards** from sales vice president to executive vice president. **Elliott E. Brainard,** formerly with Lock Joint Pipe Co., becomes sales vice president. . . . **T. Felix Hickerson,** professor of engineering and mathematics at the University of North Carolina since 1905 has retired. . . **Sigmund Roos** has resigned as head of the structural engineering department of Clark-Rapuano, New York consulting engineers, and has opened a New York office for the practice of structural engineering.

It's here! New Bruning **Copyflex 14**

speeds Production Control, Work Tickets, Accounting, Purchasing, Shipping, All Factory Paperwork!

Bruning announces its COPYFLEX 14—the revolutionary new management tool for increasing efficiency throughout factory and office.

Especially designed for desk-side copying of any system, accounting or office form, the "14" gives you error-proof, smudge-proof, low cost copies *in seconds.*

It is the newest of Bruning's renowned COPYFLEX machines—standard white-print equipment for engineering departments everywhere.

Typical COPYFLEX users* reap savings!

1. COPYFLEX *saves* life insurance company $100,000 yearly via loan processing system.
2. COPYFLEX *enables* apparel manufacturer to lower product price with production control, order-invoice system.
3. COPYFLEX *speeds* manufacturing, saves hundreds of man-hours, for large metal fabricator via production control system.
4. COPYFLEX *saves* national merchandiser $25,000 in six months by cutting clerical work in half, producing invoices on time.

*Names on request.

ONLY COPYFLEX 14 — *of all desk-side copying machines* — gives you . . .

1. 20" width! Copies even *large* reports, or two ordinary forms simultaneously. Separates and returns originals automatically.

2. No installation! No fumes, so no exhaust ducts are needed. Thus, the "14" is *mobile*, rolls to any work-site.

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4. Unequalled combination of speed, volume, low-cost. Copies thousands of large or small, *different* originals daily, at an average cost of only 2¢ per sq. ft.

COPYFLEX 14 makes exact copies . . . delivered in seconds—flat, dry, ready-to-use. There are no masters or stencils, no inks to soil hands, no darkroom, no fumes, no special room lighting, no high-priced operators. Anyone can learn to make copies in 5 minutes.

There's a COPYFLEX machine for every price or print requirement. See how Bruning COPYFLEX can speed your paperwork, give you *better* prints *faster*. Just send in the coupon to the Charles Bruning Co., Inc., Teterboro, N. J.

COPYFLEX 93 handles cut sheets or roll stock up to 42 in. wide.

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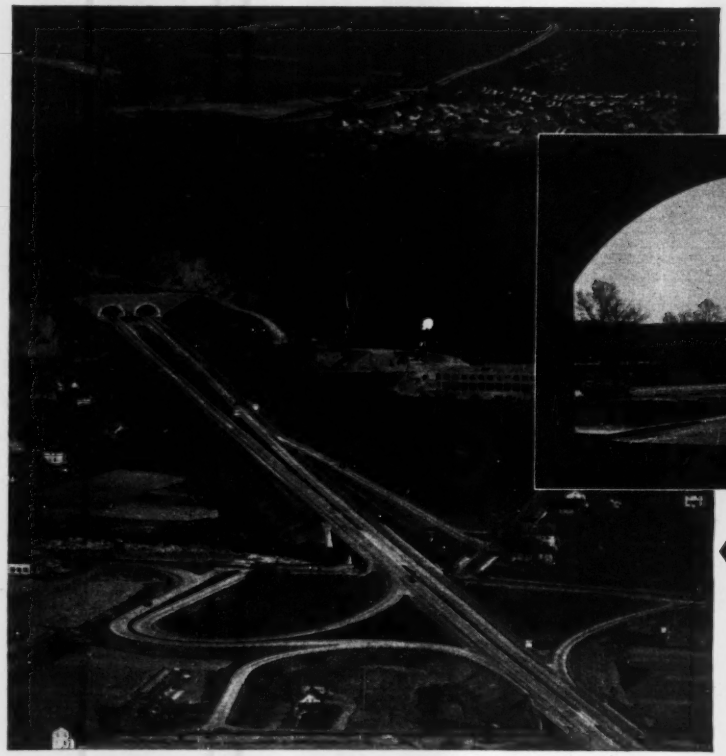
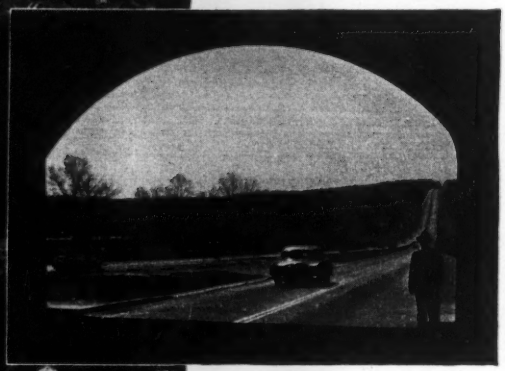
PARKWAY TUNNELS HELP MOTORISTS ESCAPE NEW HAVEN TRAFFIC TANGLE



West Rock Tunnels are 1200-ft long, and each tube has two lanes. They are equipped with automatic ventilators, traffic control signals, and an elaborate lighting system that matches at all hours the day or night conditions outside the tunnel.



Wilbur Cross Parkway at south end of West Rock's twin-bore tunnel. Highway continues on north side of mountain. Two 24-foot concrete roadways are divided by a grassy median strip. Twelve traffic interchanges permit a free flow of traffic on and off the Parkway. Grade crossings have been eliminated by 19 overpass bridges and 19 underpass bridges.

Not long ago, a trip between New York City and New England inevitably included a bout with New Haven's heavy traffic.

Today, thanks to the West Rock Tunnels, drivers can avoid the New Haven bottleneck and enjoy the Wilbur Cross Parkway's full 29 miles. Named for a former governor, the Parkway rolls northeastward from the Housatonic River Bridge at Milford to the Berlin Turnpike at Meriden.

Estimated cost of the Wilbur Cross Parkway was $17,500,000. Bethlehem furnished steel for the highway, bridges and tunnels.

Before the West Rock Tunnels were completed, motorists had to wind through New Haven. Above, Route 10 on Chapel Street near San Raphael Hospital. During rush periods the Parkway saves an hour's driving time.

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OBITUARIES

Barrett R. Powell, 34, president of the Hard Products Co., of Sacramento, Calif., smothered to death Aug. 1 when he was buried under tons of sand at his plant bordering the American River. He had climbed atop a 20-ft sand pile to push more sand onto a conveyor belt. As he stepped to the edge of a cone-shaped crater which had formed in the center of the pile above the conveyor belt a side of the cone caved in and dropped him into the deep hole. Tons of loose sand poured in on top of him.

Perry M. Andrews, 88, pioneer building contractor at Watsonville, Calif., died July 27. He was in the contracting business most of the 61 years he lived in Watsonville.

Peter C. MacRae, 77, president of MacRae Brothers, construction firm, died Aug. 5 in Seattle, Wash. He lived in Seattle for 52 years. His firm specialized in bridge construction.

Hiram B. Madden, 48, general manager of John McShain, Inc., died Aug. 5 in Trenton, N. J. He had been general manager of McShain since 1937. During that time he supervised construction of such projects as the $3,000,000 General Motors Ternstedt Division plant at West Trenton, N. J., and the $40,000,000 Naval Supply Depot at Mechanicsburg, Pa. The McShain firm remodeled the White House. Formerly he had been with the Karno-Smith Co. of Trenton, a construction firm which built many of the city's schools and other public buildings.

Fred G. Volk, civil engineer and surveyor, and former Painesville, Ohio, city manager, died July 22 in that city. He had worked for the Austin Co., Cleveland, and the U. S. Steel Co., and for the Diamond Magnesium Co., Painesville, during World War II.

C. B. Hawley, 65, president of the Charles B. Hawley Engineering Corp. of Washington, D. C., died at Bethesda, Md., July 26. He was a graduate of the former Case School of Applied Science. His firm specialized in hydro-electric design and construction.

Edwin H. Fox, 60, general manager of the Cincinnati Concrete Pipe Co., died July 13. He was past president of the American Concrete Pipe Association and of the Ohio Society of Professional Engineers.

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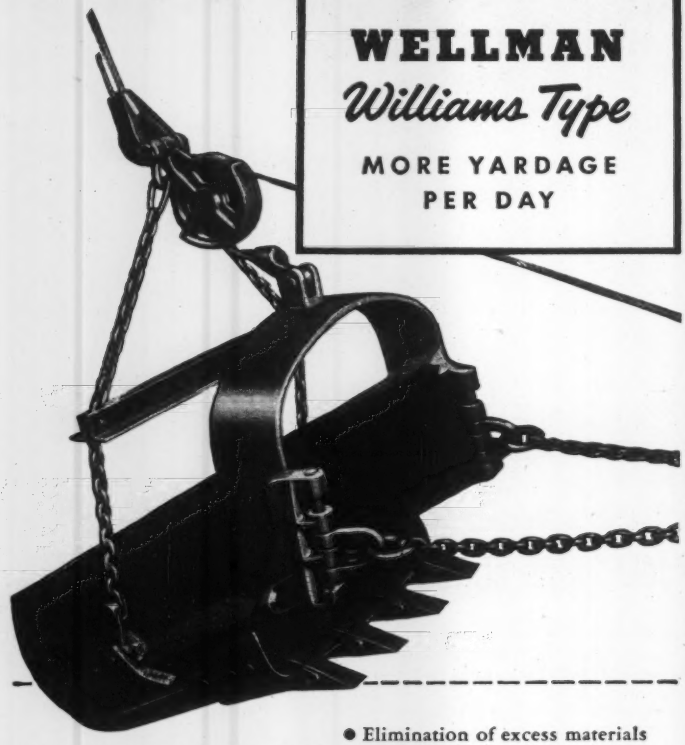

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Obituaries

George William Howson, 69, an hydraulic engineer for the California Division of Water Resources, died in Oakland Aug. 7. A C.E. graduate of the University of California, 1909, he served as chief engineer during the construction of Memorial Stadium, University Library and other buildings on the University of California campus. He headed a party of U.S. experts hired by Athens, Greece, to develop a municipal water supply in 1920. In the 1930's he assisted in the Bureau of Reclamation's studies of the water and power resources on the Kings River in California's San Joaquin Valley. In 1941 he became coordinator of the Central Valleys Project studies.

Charles La Forest Billing, 64, an engineer for the Maine state highway department, lost his life on Aug. 11 in a road construction accident at Houlton, Me.

CALENDAR

Seabee Veterans of America, 6th national convention—Schroeder Hotel, Milwaukee, Wis., Aug. 21-24.

American Public Works Association, Ambassador Hotel, and Shrine Auditorium, Los Angeles, Calif., Aug. 24-27.

Pan American Union of Engineering Societies, 3d Congress, Tulane University, New Orleans, La., Aug. 25-30.

American Society of Civil Engineers, Centennial of Engineering, Conrad Hilton, LaSalle and Blackstone hotels, Chicago, Sept. 3-13.

Sept. 4—ENR's Annual Cost Issue

National Council of State Boards of Engineering Examiners, The Antlers Hotel, Colorado Springs, Colo., Sept. 4-6.

National conference on industrial hydraulics, annual meeting, Hotel Sherman, Chicago, Sept. 4-5.

N. J. Society of Professional Engineers, semi-annual meeting, Wanamassa, N. J., Sept. 6.

N. Y. State County Superintendent's Association, Concord Hotel, Kiamesha Lake, Monticello, N. Y., Sept. 9-11.

National Constructors Association, Labor and Executive committees, Fairmont Hotel, San Francisco, Calif. Sept. 10-11.

International Symposium on the Chemistry of Cement, London, England, Sept. 15-20.

American Institute of Steel Construction, annual convention, Empress Hotel, Victoria, B. C., Sept. 29-Oct. 2.

Federation of Sewage and Industrial Wastes Associations, Hotel Statler, New York City, Oct. 6-9.

California section, American Water Works Association, Huntington Hotel, Pasadena, Calif., Oct. 27-31.

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BO-5023, Engineering News-Record
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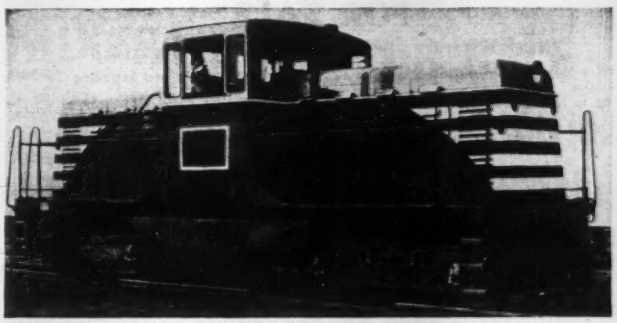

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FOR SALE
REX MOTO MIXERS
IMMEDIATE DELIVERY

5—8 CUBIC YARD CAPACITY MOTO MIXER (NO CHASSIS) AGC RATING — 8 YD. MIXER, 10½ YD. AGITATOR 316 GALLON MIXING TANK—40 GALLON FLUSHING TANK. CHRYSLER ENGINE FLUID COUPLING DRIVE.

EDWARD EHRBAR, INC.
29 MESEROLE AVE. EVergreen 3-5000
BROOKLYN, N. Y. C. B. De LEON

DEPENDABLE USED MACHINES
Special.—Quickway comb. shovel and dragline on half track, new in 1948. Come see it!

Lorain 40 shovel	Silent Hoist Krane Krawler	New 3x10 screen
P&H ½ yd. crane	New 18"x100' belt conveyor	Climax R-61 engine
Universal ½ yd. hoe	Cedar Rapids 15x36 crusher	Galion motor grader
Hanson truck crane	Gruendler 10x30 r.b. crusher	3 yd. Dumpcrete
Lessman loader	New Morris 10" manganese pump	Eagle cinder crusher

For rent,—cranes, draglines, backhoes, buckets, and all other accessories.

10002 Southwest Highway TRACTOR & EQUIPMENT CO. Oak Lawn, Ill.

FOR SALE
Bay City Model 190-T-61 Serial # 5989—25 Ton Erectors Crane, fully equipped with 130' boom, one 30' jib and one 15' jib.
T-61—4x6 Carrier with 6 cyl Waukesha gas engine, equipped with air brakes.
Excellent Condition
LARKIN BROTHERS COMPANY
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Telephone Hudson 3-4121

1—New #1 Cedarapids Kubit Impact Breaker
Serial No. 14008.
Price f.o.b. Detroit, Michigan $2,889.56
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Model PF-606-CU Frick 60 Ton Refrigerating Unit with Frick 12" x 18' long
Dry Expansion Cooler
A-1 Condition
Used Less Than 200 Hours
Price $5200.00 F.O.B. Fort Gibson, Okla.
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STRIPPING SHOVEL FRONT 2 C. Y.
30'6" Boom, 27'6" Square Stick
OFF LORAIN 820
Can be used on Lorain 79-80-82-820)
Used app. 4 months—like new
Replacement price $15,000 SACRIFICE $7500
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FOR SALE
Madsen 4000 lb. Asphalt Plant

with 72" x 30' drier equipped with Hopkins Volcanic low pressure burner, dust collector, and power by Caterpillar Diesels. Two 10,000 gallon insulated hot oil tanks. Littleford 125 H.P. quick steam generator (new August, 1950). This plant was new in July, 1949, and has produced only 50,000 Tons of material. Located in Pennsylvania. This plant is in excellent condition, ready for work, and priced within OPS Ceiling.

Adnun Pavers (converted to stone spreaders), machine in nearly new condition, spread to 12 ft. Location New Jersey.

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RAILS *New and Relaying*
TRACK MATERIALS AND ACCESSORIES CARRIED IN STOCK
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COUNT ON COMMERCIAL
FOR COMPLETE STOCK OF RELAY RAILS
BOLTS • SPIKES • SWITCHES • TIE PLATES
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5 LaPlant Choate Motor Scrapers TS-300
Priced Right
Practically New
UNITED TRACTOR & EQUIPMENT CORP.
135 East 146 St., N. Y. 51, N. Y.
Cypress 2-0800 A.E.D. Member

IMMEDIATE SHIPMENT
RAILS NEW RELAYING
SWITCH MATERIAL
ALL TRACK ACCESSORIES
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Model 180 Single Pumpcrete
1000' of pipe and fittings
For Quick Sale—$5500.00
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Tie Plates - Spikes - Frogs & Switches, Etc.
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2111-X Railway Exchange Bldg., St. Louis, Mo.
Stocks at Various Points — Quick Service

NEW—RAILS—Relayers
All sizes and weights. Also frogs, switches, spikes, bolts, tie plates, contractors' and mine equipment carried in stock.
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Reno, Nevada
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Carnegie, Pa.

FOR SALE
LORAIN CRANE—2 YARD
MODEL L-820, SERIAL #11805, 90 ft. BOOM
New Cummins Diesel Engine—Complete With Fair Leads
GENERAL SAND & STONE CORP.
ELMWOOD 10, CONN.

IMPORTED STEEL — OPEN HEARTH
TO YOUR SPECIFICATIONS
GOOD DELIVERIES — REASONABLE PRICES

FORGING BARS • ROUNDS • SQUARES
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steel products

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BEekman 3-3041 Cable FABKANT

FOR RENT OR SALE
Equipment in 90% new condition

Osgood 816 #5900 (11-49) standard 1¾ yd. shovel. Cat D-13000, 33" pads, 15' crawlers.
Osgood 826 #5993 (4-51) equipped same as above.
(2) TD-24's with B-E DDPCU & angledozers.
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All sizes backhoes, cranes, dozers etc.

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Bought and Sold
New and Rebuilt
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RENT • REPAIRING

Locomotives, 7 to 80 tons, diesel, gasoline.
Shovels, Draglines, Cranes, ½ to 10 yds.
Loco. cranes, 18, 20, 30 tons, gas, steam.
Walking draglines, 3, 6-7, 9½, 12, 15 yds.
Whirley cranes, Amer. 10-125, Clyde 17, Colby 200.
Crushers: Telsmith 25A gyr.; 30", 42", 54".
Trenchers, Parsons 25, 310, Buckeye 224, 160.
Nordberg—G.E. 875 KW diesel generator set.
B-E 2-1/3 yd. shovel front attach., 52B-55B.
H. Y. SMITH CO.
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Like new. Discount.
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FOR SALE OR RENT:
One (1) 45 ton Lorain Truck Crane
500 lineal ft. narrow gauge rail
6 c-35 drafters
BUCKS COUNTY CONSTRUCTION CO.
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Phone: Langhorne 3795

WANTED
NEW CRAWLER TRACTORS
D8 - D7 - D6 - D4HT4 - D4 - D2 - TD24 - TD18A - TD14A - TD9 - TD6 - HD20 - HD15 - HD9 - HD5G
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WANTED TO RENT OR BUY
LIGHT GAS LOCOMOTIVE CRANE
With 35' or 40' Boom and 5 to 10 Ton Lifting Capacity.
JONES CONTRACTING CO.
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WANTED
2 NORTHWESTS MODEL 80D WITH MURPHY DIESEL ENGINES good condition guaranteed
For above:
1 Pullshovel; 2 Dragline buckets H.D.:
1 Shovel; 2 Fair Leads:
2 80 Foot Booms; 2 Clamshell Buckets H.D.:
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Reply W-5111, Engineering News-Record, 330 West 42 St., New York 36, N. Y.

WANTED
NEW POWER SHOVELS
DIESEL POWERED
22B - 38B - 54B
Cash Waiting
EVANS and EDELL
159 WEST 22 ST. NEW YORK 11, N. Y.
ALGONQUIN 5-3800

Notice to Advertisers

Because of the Labor Day Holiday, September 1st, the "Searchlight" pages of the

September 11th Issue of

ENGINEERING NEWS-RECORD

Close for press earlier than the usual weekly closing time.

The cooperation of advertisers is solicited in forwarding new copy, or changes of copy, to reach us accordingly.

FINAL CLOSING TIME
Display and Undisplayed Ads
Thursday, August 28th

PROPOSALS
Thursday, September 4th

Exceptional BUY on NEW
TRANSITS and LEVELS
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This offer made possible by our method of direct selling to consumer. A savings of over $100 . . . . and the quality is all there.
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LIGHT BROWN
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ENAMEL
REGULAR $30. VALUE
5 FULL GALLONS FOR ONLY **$39.95**

SHIPPING WEIGHT 68 LBS. F.O.B. PHILA.

A fine bodied, lusterless, enamel made to U.S. Air Corps Spec. #680—Class 20. For all wood and metal surfaces, protects against weather, rust and corrosion. For brush or spraying inside or outside, can be blended with other colors. Ideal for road equipment, scrapers, cranes, trucks, tool sheds and outbuildings. Makes fine prime coat.

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1744

J. JACOB SHANNON & CO.
214 N. 22nd St., Phila. 3, Pa.
The Oldest Equip. House in Phila.

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New
Byers ¾ cu. yd.
SHOVEL
and/or
50' Clam Boom
PRICED LOW FOR IMMEDIATE SALE

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Troy, N. Y.
Tel. ADams 8-3314

GAR WOOD 6 TON CRANE

Model 12015

- 14'x22' telescopic boom, 190° swing, 60° elev.;
- Outriggers sides and rear;
- Mounted on FWD truck. 178 HP Waukesha gasoline motor;
- Model YU-5-SOE, 150" wheelbase, 14x20 tires;
- 4-wheel air-brakes;
- One man operation complete unit.

Top mechanical condition; mileage 4237.

Asking $5800

Inspection at:

THOMAS LAUGHLIN CO.
Portland, Maine

SALE — RENT
GUARANTEED LIKE NEW

1949 LORAIN 820 2 C.Y.
HI-FRONT SHOVEL, CRANE, DRAG

CHEMICAL CO.
145 W. 63 St., N.Y.C. MU 5-6826

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2—TD 18-A INT. Tractors w/ Bucyrus-Erie Angle Blades (cable). DD Power Controls. Excellent Condition. Purchased June '50. Newly Painted. 1700 hrs. $8,500.00 Ea.

1—TD 24 Int. Tractor w/Bucyrus-Erie Bull Dozer Blade (cable) DD Power Controls. Bought Feb. '50. Approx 1500 hrs. Excellent Condition. $13,000.00.

1—Letourneau F. P. Scraper 15-18 yds. Dual Tires. Scraper good. Tires fair $2500.

MASON AND BACON CO.
Box 175 Office Telephone 4-4100
Frankfort, Ky. F. C. Mason Home Tel. 4-6107

FOR SALE
TUNNEL FORMS

All steel collapsible 42' wide 23' high in two 31' sections. Complete in all details. Used for only twenty pours on Highway Tunnel in Arizona. Immediate delivery. Bargain. Refer to Engineering News Record of July 24, 1952, for illustrated story on these forms.

Vinson Construction Company
P. O. Box 930 Phoenix, Arizona

FOR SALE:

PILE DRIVING OUTFIT

Northwest Model 8 Crane—Serial No. 3851
70 foot Boom—Cummings Diesel Engine—
McKiernan-Terry Hammer #9B-3 Serial 9177
One 75 HP Steam Boiler—Oil Fired—60 foot Pile Leads.

Finishing present job August 16th 1952—located at Bethelehem Penna.

$25,000.00.

For inspection—contact

CONSTRUCTION CORPORATION OF PENNA.
2237 Bryn Mawr Ave—Philadelphia 31 Penna.
PHONE—GREENWOOD 3-4802

OR:

CONSTRUCTION CORPORATION OF PENNA.
Niagara Falls Air Base—Niagara Falls N Y
Phone—Sanborn 177—New York

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EST. 1904

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ONE OF THE LARGEST STOCKS IN THE EAST

Seamless and Welded 1/8" to 26" O.D.
All wall thickness Manufactured.
Specialty large sizes.
Cutting — Threading — Flanging — Fittings — Valves.

Call GEdney 9-6300
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FOR SALE—*Immediate Delivery*

C. I. Water Pipe A.W.W.A. Standard

BELL & SPIGOT—10 inch, 12 inch, 16 inch, 20 inch, 24 inch and other sizes

FLANGED PIPE— 4 inch, 6 inch, 8 inch, 10 inch, 12 inch

C.I. Water Pipe Fittings—B & S—and Flanged—All kinds and sizes

SOIL PIPE—EXTRA HEAVY—8 inch—10 inch 12 inch—16 inch

The above subject to prior sales

TAGCO, INC.
111 Front Street Hempstead, L. I., N. Y.
Tel.—Hempstead 2-5535 or 2-8857

FOR SALE
New Wire Rope Blocks

18" Single 20 Ton with S. Shackle $25.00
18" 3-Sheave 30 Ton with Shackle 50.00
18" 4-Sheave 30 Ton with Shackle 75.00
#32 Drop Forge Hooks, New 2.00

ABERTHAW COMPANY
133 Southampton St. Boston 18, Mass.

PIPE FOR SALE

24" d. Corrugated Galvanized in 30' lengths—approximately 5500'. Used once for Ventilation Duct in 12' d. Tunnel — REASONABLE & stored in Cleveland, Ohio.

Contact: **THE KALILL CO.**
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Phone: CL-1-3848

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IF IT'S MADE, WE HAVE IT!

Seamless and Welded—Every Size and Wall Thickness—Cast and Wrought Iron, Steel, Alloys

POWER PIPE FABRICATING
Bending, Coiling, Flanging, Threading, Bevaling, Lining, etc.

Valves & Fittings
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SPEED-LAY PIPE SYSTEMS
Write for brochure

ALBERT
PIPE SUPPLY CO., INC
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Phone EVergreen 7-8100

FOR SALE
REINFORCING STEEL

All sizes 7000 tons
In stock for immediate shipment
NO CMP required

Jafra Incorporated **Tel. 84-0651**
Drawer E, Little River Sta., Miami 38, Fla.

If there is anything you want
or something you don't want that readers can supply—or use—*advertise it in the*
Searchlight Section

BOOMS - DERRICKS - TANKS

Crane booms for all makes of cranes—stiff leg derricks—elevated water tanks with hemispherical bottoms — flat-bottomed storage tanks. Prices competitive.

THE DEL-STRAT CORP.
Box 195 Delaware, Ohio Phone 23150

OFFICIAL PROPOSALS

APPEAR HERE EACH THURSDAY. PROPOSAL ADVERTISEMENTS ACCEPTED UP TO 10:30 A.M. FRIDAY FOR THE ISSUE DATED THE FOLLOWING THURSDAY

Bids: September 16, 1952

Construction of a Collecting Sanitary Sewer System and Appurtenances

NOTICE TO CONTRACTORS

Sealed proposals will be received by the Springettsbury Township Sewer Authority of Springettsbury Township, York County, Pennsylvania in the Springetts Fire House, 2914 E. Market Street, York, Penna., until 7:30 P. M. Eastern Daylight Time, the day of September 16, 1952, for the CONSTRUCTION OF A COLLECTING SANITARY SEWER SYSTEM AND APPURTENANCES IN SPRINGETTSBURY TOWNSHIP, YORK COUNTY, PENNSYLVANIA, at which time and place they will immediately be publicly opened and read aloud.

The work under this contract will consist of the Construction of Approximately 16,600 lineal feet of Vitrified Clay Pipe Sewer 8" to 24" diameter and approximately 1,800 lineal feet of C.I.P. 8" to 24" in Diameter placed near Mill Creek in Springettsbury Township, York County, Pennsylvania. Also an inverted siphon beneath Codorus Creek. Manholes, diversion chambers and appurtenances included.

The information for Bidders, Form of Contract, Plans, Specifications and Form of Performance Bond may be examined at the office of the Weigle Engineering Company, #30 N. Duke St., York, Pa., copies thereof may be obtained at the said office of the Weigle Engineering Company, upon payment of $30.00 for each set. Any bidder upon returning such set in good condition will be refunded his payment and any nonbidder upon so returning such set will be refunded $15.00, provided that said Plans and Specifications are returned within 15 days after the date of the opening of Bids. If the plans and specifications are not returned within the stated time the entire amount of the deposit will be forfeited.

The Springettsbury Township Sewer Authority reserves the right to waive any informalities in, or to reject, any or all bids.

A bid bond or certified check made payable to the Springettsbury Township Sewer Authority in the amount of five (5%) per cent of the bid must be deposited by each bidder with his bid as a guarantee that in the case the contract is awarded to him, that he will within five (5) days, execute such contract and furnish a satisfactory Performance Bond. On failure to do so he shall forfeit the deposit as liquidated damages, and acceptance of the bid will be contingent upon the fulfillment of this requirement by the Bidder.

The successful bidder will be required to furnish a Performance Bond in the amount of the Bid submitted, and a separate Labor and Materialman's Bond in an amount equal to 50% of the total of the bid submitted. These bonds shall have a Surety Company or Companies thereon as are acceptable to the Authority.

No Bidder may withdraw his bid within forty-five (45) days, after the date set for the opening thereof. Any bid may be withdrawn prior to the above scheduled time for the opening of bids or authorized postponement thereof.

SPRINGETTSBURY TOWNSHIP SEWER AUTHORITY
Gerald Workinger, Secretary
23 South Vernon Street
York, Pennsylvania
Date August 7, 1952

Bids: September 4, 1952

Construction of a Road

NOTICE TO CONTRACTORS: State Department of Public Works, Albany, N. Y.—Pursuant to the provisions of the Public Buildings Law, sealed proposals will be received until: ten-thirty o'clock A.M., advanced standard time, which is nine-thirty o'clock A.M., eastern standard time, on the 4th day of September 1952, by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the Construction of the following project in Suffolk County.

Contra No. ct		Name of Highway and Miles	Deposit for Plans	Bid Deposit	Dept. Estimate
B.P. 52-4 8	Type Snow Fence to Arrest Beach Erosion	Village of Ocean Beach 0.32 Miles	$10.00	5% of bid	$5,500

Maps, plans, specifications, and estimates may be obtained at the office of the Department of Public Works, Bureau of Contracts and Accounts, Albany, N. Y., and at the office of the District Engineer J. J. Darcy, Dist. Engr., Montauk Highway at Little E. Neck Rd. Babylon, Long Island, N. Y. and may be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement. Award of a contract is subject to the "Controlled Materials Plan" of the National Production Authority as well as to regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Law, as set forth in "Instructions to Bidders."

The right is reserved to reject any or all bids.

B. D. TALLAMY
SUPT. OF PUBLIC WORKS

Bids: September 3, 1952

Sealed bids addressed to the Public Works Commissioner of the State of Connecticut for

Item #1 Construction of Field House
University of Connecticut
Storrs, Connecticut
Project B/A-D-76D
Dwgs. & Specs. ready 8/6/52
Bid Opening 9/3/52
**Deposit—$10.00

will be received in Room 491, State Office Building, Hartford, Connecticut, until 2:30 P.M., E.D.T. on the dates shown above with each Item, and thereafter publicly opened and read aloud in Room 214, State Office Building, Hartford, Connecticut. Dwgs. & Specs. may be obtained in Room 469, State Office Building, Hartford, Connecticut. Deposits in the amount of Ten Dollars ($10.00) and Five Dollars ($5.00) for Items #1 and #2 respectively are required in the form of a check made payable to the Treasurer of the State of Connecticut. **IN EVENT THE DWGS. & SPECS. ARE NOT RETURNED WITHIN FIFTEEN (15) DAYS AFTER THE BID OPENING, THE DEPOSIT WILL BE AUTOMATICALLY FORFEITED. The Performance and Payment Bonds to be furnished by the bidder awarded the contract shall be in an amount not less than 100% of the contract price. The Public Works Commissioner reserves the right to reject any and all bids. Each bid must be accompanied by a CERTIFIED CHECK drawn upon either a STATE BANK AND TRUST COMPANY or a NATIONAL BANKING ASSOCIATION located in this State, to the order of the Treasurer of the State of Connecticut, or the bid may be accompanied by a BID BOND in the form required by the Public Works Commissioner and having as surety thereto such Surety Company or Companies, as are acceptable to and approved by the Public Works Commissioner, and as are authorized to do business in this State, for an amount not less than 5 per centum of the bid.

RALPH G. MACY—COMMISSIONER,
PUBLIC WORKS DEPARTMENT,
STATE OF CONNECTICUT

Bids: August 28, 1952

Soil Explorations and Foundation Investigations at Various Sites on The Horace Harding Expressway, Section 1, Queens Boulevard to Parsons Boulevard, City of New York, Queens County, Which Constitutes Contract No. Spec. SM-41

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of Highway Law, sealed proposals will be received until 10:30 A.M., Eastern Daylight Saving Time, on August 28, 1952 by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y. for

Maps, plans and specifications may be examined and obtained at the following offices:

(a) Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany 1, New York
(b) J. J. Darcy, District Engineer, Montauk Highway and Little East Neck Road, Babylon, L. I., New York
(c) Charles Schaefer, Department of Public Works, 270 Broadway, New York City.

The deposit for a set of plans, specifications and proposal forms is $5.00. A refund in full will be made to bidders for return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

The Engineer's estimate of cost for this work is $7,815.00.

Proposal for this contract must be submitted in a separate sealed envelope with the name of the contract plainly endorsed on the outside of the envelope. Proposal must be accompanied by draft or certified check payable to the order of the "State" of New York, Commissioner of Taxation and Finance" for the sum of $400.00. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instruction to Bidders".

The right is reserved to reject any or all bids.

B. D. TALLAMY
SUPERINTENDENT OF PUBLIC WORKS

U. S. Government

GOVERNMENT OF THE DISTRICT OF COLUMBIA, DIRECTOR OF SANITARY ENGINEERING, D. C., August 8, 1952. SEALED PROPOSALS will be received in Room 429, District Building, 14th and E Streets, N. W., Washington 4, D. C., until 2:00 P. M., September 25, 1952, EASTERN DAYLIGHT TIME, and then publicly opened and read for Sludge Disposal Plant, Structures and Equipment (Unit 17), and Chimney (Unit 18), Sewage Treatment Plant, Washington, D. C. This project will house equipment, able to dry or incinerate sewage sludge removed by a high rate activated sludge treatment plant to serve 1,500,000 persons. Proposal Forms, Drawings and specifications may be obtained from the Chief Clerk, Engineer Department (Secretary, Contract Board, D. C.), Room 427, District Building, upon the deposit of a certified check made payable to the Collector of Taxes, D. C., in the amount of FIFTY DOLLARS ($50.00) for each set. (Telephone National 6000, Ext. 2378)

OFFICIAL PROPOSAL

RATE: $1.50 per line (or fraction) per insertion.
CLOSING DATE: 10:30 A.M. Friday for issue out following Thursday.
SEND COPY: Official Proposal Division, Engineering News-Record, 330 W. 42nd St., New York 36, N. Y.

OFFICIAL PROPOSALS

Bids: September 4, 1952

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, Albany, N. Y.,—Pursuant to the provisions of the Highway Law, and Article 2, Title 9 of the Public Authorities Law, and special provisions for projects financed with federal aid funds, sealed proposals will be received until ten-thirty o'clock A. M., advanced standard time, which is nine-thirty o'clock A. M., eastern standard time on THURSDAY, SEPTEMBER 4, 1952 by Henry A. Cohen, Director, Bureau of Contracts & Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects: Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts & Accounts, Albany, N. Y., and at the office of the District Engineers noted below, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for plans and proposal forms for each contract is indicated below. A refund will be made in full to bidders for the return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

County	Contract No.	Name	Miles	Type	Deposit	Cost of Work
		DISTRICT No. 1				
		G. L. NICKERSON, District Engineer, 353 Broadway, Albany, New York				
Albany	C.T. 52-4	N. Y. State Thwy-Catskill Sect.—	0.14	9" Cem. Conc. Pavt.	$96,000	$1,761,000
	C.T.C.52-5	Sub. 4 (Normanskill Bridge)		2 @ 37 = 0.12 Mi.;	Plans $15	
				Misc. Work = 0.02 Mi.		
				Deck Truss (Alpha) 623.82′		
		DISTRICT No. 2				
		LACY KETCHUM, District Engineer, 109 No. Genesee St., Utica, New York				
Madison &	M.T.52-9	N. Y. State Thwy-Mohawk Sect.	(1.19	Grading & Drain.=0.36 Mi.	$75,000	1,374,000
Oneida	M.T.C.52-10	—Sub. 4 (Oneida-Verona Sta.)	Acc)	Asp. Conc. Ty. I-A	Plans $25	
	S.T.52-18	Lake St.; Scomodon Rd. & Sand	0.36	Opt. = 1.19 Mi.		
	S.T.C.52-19	Hill Rd.		RR Sep. Alpha I-Beam 174.2′		
				Alpha I-Beam Br. 169.5′		
				Hy. Sep. Alpha I-Beam 204′		
				Hy. Sep. Alpha I-Beam 263.33′		
		DISTRICT No. 3				
		WM. ROBINSON, District Engineer, Weigh Lock Building, Syracuse, New York				
Onondaga	O.T.52-12	N. Y. State Thwy-Ontario Sect.	(0.60	9" Cem. Conc. Pavt.	$105,000	1,893,000
	R.C.52-91	—Sub. 7 (Warners-Route 370);	Acc)	2 @ 25′, 24′	Plans $25	
	S.T.52-20	Baldwinsville-State Fair	0.20	Wide = 0.48 Mi.;		
		S.H. 8496 & Van Vleck Road		Asp. Conc. Ty. I-A,		
		Connection		Opt.= 0.18 Mi.		
				Misc. Work = 0.14 Mi.;		
				Hy. Sep.		
				Alpha I-Beam 265.75′		
				Br. Plate Girder 450′		
		DISTRICT No. 4				
		J. P. LARSEN, District Engineer, Barge Canal Terminal, Rochester, N. Y.				
Monroe	LOSP 52-2	Lake Ontario State Pkwy.	1.59	Grading & Found. Course	$66,000	1,229,000
		Section C		3 Sp. Alpha I-Beam 200′	Plans $25	
				Reinf. Conc. Slab 30.5′		
				Twin Closed Box Br. 23.1′		
Ontario	FAC 52-8P	Proj. U & UG 452(6)	0.98	9" Cem. Conc. Pavt. 48′-58′	$65,000	1,214,000
	FAC 52-9	Geneva City: Lake Front		Wide = 0.85 Mi.;	Plans $25	
	FAGC 52-10	Arterial Pts. 1 & 1-A		Asp. Conc. Ty. 1A Opt.		
				= 0.11 Mi.; Misc. Work		
				= 0.02 Mi.		
				RP Sep. 5 Sp.		
				Alpha I-Beam = 326.08′		
				Hy. Sep. Rigid Frame		
				Arch = 70′		
Ontario	O.T.52-10	N. Y. State Thruway-Ontario	(4.58	9" Cem. Conc. Pavt;	$298,000	5,276,000
	R.C.52-76	Sect.—Subd. 13 & 14 (Town	Acc)	2 @ 25 & Var. Wide =	Plans $100	
	S.T.52-16	Line-Pt. Gibson Rd.);	9.88	11.09 Mi.; Asp. Conc. Ty.		
		Canandaigua Interchange;		1A Opt. = 0.80 Mi.;		
		Chapin-Palmyra Pt. 2,		D.S.T. Br. Stone = 1.61 Mi.		
		S.H. 1549 & 8 cross roads.		Misc. Work = 0.96 Mi.;		
				3 Hy. Seps. Alpha		
				I-Beams 203.5′, 235.5′ &		
				230.84′		
				1 Interchange Alpha		
				I-Beam 224.75′		
				2 Brs. Alpha I-Beam 154′ each		
		DISTRICT No. 6				
		H. F. BRUMM, District Engineer, State Office Building, Hornell, N. Y.				
Steuben	FARC 52-88	Proj. F-206(3); F-503(8)	4.18	9" Cem. Conc. Pavt. 24′	$85,000	1,583,000
		Erwin-Lawrenceville Pts. 1 & 2		Wide	Plans $25	
		S.H. 1593-8146		Twin R.C. Box Br. 52.		
				R.C. Box Br. 22′		
		DISTRICT No. 8				
		J. S. BIXBY, District Engineer, Pleasant Valley Road, Poughkeepsie, New York				
Ulster	R.C.52-87	Marlboro-Cedar Hil Cemetery	3.39	Asp. Conc. Ty. 1A,	$9,000	$166,000
		S.H. 5176		Optional	Plans $10	
		Milton-Marlboro, S.H. 5114				
		DISTRICT No. 9				
		F. W. DONOVAN, District Engineer, 71 Frederick St., Binghamton, New York				
Sullivan	FARC 52-89	Proj. S-378(1)	7.29	Asp. Conc. Ty. I-A, Opt.	$85,000	1,566,000
		Liberty-Jeffersonville		Reinf. Conc. Box Br. 36.25′	Plans $25	
		Pts. 2 & 1, SH 700-699		3 Reinf. Conc. Slab Brs.		
				30′, 34′, 30′		

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to the "Controlled Materials Plan" of the National Production Authority as well as to regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instructions to Bidders".

When optional types are permitted on contracts with federal funds, bidders must state in the space provided in the proposal the exact designation of the optional type upon which the proposal is predicated.

The right is reserved to reject any or all bids.

B. D. TALLAMY
SUPT. OF PUBLIC WORKS

Bids: September 5, 1952

Repairs to Roofing and Gutters Building No. 102 Port Newark, N. J.

THE PORT OF NEW YORK AUTHORITY
CONTRACT O & M 164
PROPOSAL NO. 897

Sealed proposals for the repairs to Roofing and Gutters, Building No. 102, Port Newark, New Jersey, will be received at the office of the Director of Purchase of The Port of New York Authority, Room 1402, 111 8th Ave., New York 11, until 11:00 A.M. (EDST) Friday, September 5, 1952, at which time and place proposals will be publicly opened and read.

Contract documents may be obtained upon request at the office of the Director of Purchase.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman

New York, August 21, 1952

OFFICIAL PROPOSALS

Bids: August 28, 1952

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of Highway Law, sealed proposals will be received until 10:30 A.M., Eastern Daylight Saving Time, on August 28, 1952 by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y. for

Soil Explorations and Foundation Investigations at Various Sites on The New York State Thruway, Southern Westchester Connection, Subdivision 11, New York City Line to Tuckahoe Road, City of Yonkers, Westchester County, Which Constitutes Contract No. Spec. SM-43

Maps, plans and specifications may be examined and obtained at the following offices:

(a) Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany 1, New York
(b) J. S. Bixby, District Engineer, Pleasant Valley Road, Poughkeepsie, N. Y.
(c) Charles Schaefer, Department of Public Works, 270 Broadway, New York City

The deposit for a set of plans, specifications and proposal forms is $5.00. A refund in full will be made to bidders for return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

The Engineer's estimate of cost for this work is $22,730.00.

Proposal for this contract must be submitted in a separate sealed envelope with the name of the contract plainly endorsed on the outside of the envelope. Proposal must be accompanied by draft or certified check payable to the order of the "State" of New York, Commissioner of Taxation and Finance for the sum of $1,137.00. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instruction to Bidders".

The right is reserved to reject any or all bids. B. D. TALLAMY
SUPERINTENDENT OF PUBLIC WORKS

Bids: September 10, 1952

Emergency Power for Temporary Terminal Building and Fuel Storage Area

THE PORT OF NEW YORK AUTHORITY
NEW YORK INTERNATIONAL AIRPORT
CONTRACT NYA-160.024

Sealed proposals for recirculting existing power and lighting and furnishing and installing additional panels and plug-in devices for emergency power and light in the Temporary Terminal Building and the Emergency Garage at New York International Airport will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 8th Ave., New York 11, until 11:00 A.M. Wednesday, September 10, 1952, at which time and place said proposals will be opened and read.

Contract documents may be seen at the office of the Engineer of Materials, Room 1119, and copies will be furnished upon deposit of $10 per set. Deposit to be delivered to the Treasury Department, Room 1001, where a receipt in duplicate will be issued. A copy of the receipt should then be delivered to the Engineer of Materials who will furnish the contract documents. The deposit will be remitted if the documents are returned in good condition, not later than 30 days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman

New York, August 21, 1952.

CONTRACTORS
Watch this Section
for New Projects
Publish your announcement thru the "Proposals Section" of Engineering News-Record and get their bids.

OFFICIAL PROPOSALS

Bids: September 23, 1952

Shavertown Bridge Piers and Abutments

CONTRACT 415

SEALED BIDS will be received by the Board of Water Supply, at its offices, thirteenth floor, 120 Wall Street, New York City, until 10:00 A.M., Eastern Standard Time, on Tuesday, September 23, 1952, for Contract 415, for the construction of the piers and abutments of the Shavertown bridge, in the Town of Andes, Delaware county, New York. The bridge will cross the valley of the East Branch of the Delaware river at a point about one mile east of the village of Shavertown. The piers and abutments will be constructed of reinforced concrete and partly faced with granite, all as set forth in the specifications.

No bid will be received and deposited unless accompanied by a certified check upon a National or State bank, drawn and made payable to the order of the Comptroller of the City of New York, in the amount of fifty thousand dollars ($50,000.00), for the proper execution of the contract.

At the above place and time the bids will be publicly opened and read. Pamphlets containing information for bidders, forms of bid and contract, specifications, contract drawings, requirements as to surety, etc., can be obtained at the office of the Chief Engineer, Room 1311, at the above address, upon application in person or by mail, by depositing the sum of five dollars ($5.00) in cash or its equivalent for each pamphlet. Within 30 days following the award of contract or rejection of bids, the full amount of such deposit will be refunded for each pamphlet submitted as a bid and a refund of four dollars ($4.00) will be made for each other pamphlet returned in acceptable condition. Arrangements will be made whereby prospective bidders desiring blueprints of the contract drawings for their own use may secure same, the cost thereof to be paid by them. For further particulars, apply at the office of the Chief Engineer at the above address.

IRVING V. A. HUIE, President, RUFUS E. McGAHEN, EDWARD C. MAGUIRE, Commissioners, Board of Water Supply; RICHARD H. BURKE, Secretary.

Bids: September 17, 1952

City of Chicago Invites Bids for Three (3) Sections of Tunnel Construction for Central District Filtration Plant, Chicago, Illinois

Sealed proposals on three (3) sections of tunnel construction will be received by the Department of Purchases, Contracts and Supplies until 11:00 A.M., Central Daylight Saving Time, September 17, 1952, at Room 401, City Hall, Chicago, Illinois, at which time and place all such proposals will be opened and read publicly.

Brief descriptions of the three tunnel sections are as follows:

Specifications No. 80.391-52-1, Section "A", furnish all labor and materials required for the construction of four (4) shafts in Filtration Plant site area 400 feet north of Navy Pier and 500 feet east of Lake Shore Drive; one (1) 20-foot tunnel in rock, 1400 feet in length; three (3) 16-foot tunnels in rock approximately 11,400 feet in length and one (1) 16-foot tunnel in clay approximately 90 feet in length together with all other work appurtenant thereto.

Specifications No. 80.391-52-2, Section "B", furnish all labor and materials required for the construction of 14-foot work shaft, two (2) lengths of 16-foot tunnel in rock, with total length of approximately 14,400 feet, one extending southeasterly to connection with Tunnel Section "A" and the other extending northwesterly to connection with Tunnel Section "C", together with all other work appurtenant thereto.

Specifications No. 80.391-51-3, Section "C", furnish all labor and materials required for the construction at location from two (2) shafts in Park Area south of Wilson Avenue and east of Clarendon Avenue, two (2) 16-foot tunnels in rock, with total length of approximately 4700 feet; one (1) 12-foot tunnel in rock, 200 feet in length; one (1) 8-foot tunnel in clay approximately 250 feet in length and one (1) by-pass structure, together with all other work appurtenant thereto.

OFFICIAL PROPOSALS

Bidders may bid on any one section, combination of sections or on all three (3) sections.

A proposal shall be accompanied by a bid deposit in cash, cashier's check, certified check or Comptroller's Certificate of monies owed the particular bidder in amounts as follows:

Section "A"—	$185,000.00
Section "B"—	145,000.00
Section "C"—	60,000.00
Total for Sections "A", "B", and "C"	390,000.00

Checks are to be drawn on some responsible bank located and doing business in the United States and are to be made payable to the Purchasing Agent, City of Chicago.

A deposit for plans and specifications of $50.00 is required for each section or $150.00 for all three sections. These deposits are returnable upon return of plans and specifications.

All communications and requests for plans and specifications should be addressed to the Purchasing Agent, Department of Purchases, Contracts and Supplies, Room 401, City Hall, Chicago 2, Illinois.

JOHN F. WARD,
Purchasing Agent.

Bids: September 4, 1952

Goethals Bridge

THE PORT OF NEW YORK AUTHORITY
NEW JERSEY PLAZA
FIELD OFFICE
CONTRACT AK-110.004

Sealed proposals for the construction of a field office at the New Jersey plaza of the Goethals Bridge will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 8th Ave., New York 11, until 11:00 A.M. Thursday, September 4, 1952, at which time and place said proposals will be opened and read.

Contract documents may be seen at the office of the Engineer of Materials, Room 1110, and copies will be furnished upon deposit of $25 per set. Deposit to be delivered to the Treasury Department, Room 1001, where a receipt in duplicate will be issued. A copy of the receipt should then be delivered to the Engineer of Materials who will furnish the contract documents. The deposit will be remitted if the documents are returned in good condition, not later than 30 days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman
New York, August 21, 1952

The minute you seal the envelope you seal the verdict...

NO ONE but a bidder can decide, practically, whether he, or someone else, will be the successful bidder on any contract . . . because it is you — the bidder — who decide what you will charge to do the work. No one can decide that but you. So, you actually "write your own ticket."

NATURALLY, you must deliver certain specified materials and perform definite functions, within a certain time—that much of the job is something over which you have no control. But . . . it is when you begin to plan ways and means of DOING the job that you start to win or lose it. If you can do it more quickly, with less loss of motion, and, possibly, with fewer manhours to charge against the job—in other words, at a lower cost to you — you will have the "edge" you need to make you the successful bidder.

LOW cost operation is usually the result of a thorough knowledge of the most efficient methods—and the use of modern equipment. You will be well repaid through your reading of ENGINEERING NEWS-RECORD—both editorial and advertising.

SEARCHLIGHT SECTION

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Insurance companies show decrease in mortgage buying to half 1951 pace

Following a well-defined pattern, U. S. life insurance companies have slowed their purchases of mortgages to about half the pace of 1951. But the companies are far from out of the market—their holdings of such securities are increasing, despite the cutback in purchases.

According to latest available figures, supplied by the Institute of Life Insurance, the nation's life insurance companies purchased mortgages valued at $1.6 billion in the first five months of 1952, compared with 2.5 billion in the same period of 1951.

Indicating that the companies were holding their securities, however, was the fact that total holdings of mortgages were put at $20.2 billion in the first five months of 1952, compared with $17.7 billion in the comparable 1951 period.

• **Planned move**—The cutback in mortgage purchases by the life companies —which represent the largest single U. S. reservoir of capital (some $65 billion in assets)—was no surprise to financial circles.

In May of this year (ENR May 15, p. 17) officials of the Prudential Insurance Co. of America (second largest company in the field) said flatly they had cut purchases of mortgages by 50% for the current year.

Similar moves by other companies had long been forecast. The reasons were basically two: the "unpegging" of Federal bonds more than a year and a half ago; and the fact that many insurance companies had reached what they considered to be a safe balance in their portfolios of investments.

The "unpegging" of Federal bonds forced the bonds to seek their own market price level. For this reason, it had the effect of cutting the availability of ready cash, since the bonds might not always be salable at face value. Some idea of the effect of the "unpegging" on the thinking of the companies in this matter is gained from the fact that in 1949, 25.6% of assets were in government securities, but by 1951 that figure had dropped to 16.1%.

As to the holdings of mortgages, the Institute of Life Insurance said, the companies had placed 28.3% of their assets in these securities by 1951. That percentage figure will drop slightly with reduction in purchases during the year, observers believed.

• **Effects**—The effect of the cutback in mortgage buying (a lot of it in the secondary market—purchases from original mortgagors that thus supplied a source of ready cash to them) has been spotty.

It has resulted in some tightening of the availability of mortgage money to buyers of new homes and other structures—although that gap has been partially filled by mutual savings banks, which have increased their mortgage commitments in the past year.

Housing experts are convinced that the shortening of this money supply has been contributing factor to the slowing rate of new housing construction—as much of a factor, perhaps, as the continuing restrictions of Regulation X.

Authority will speed Lincoln Tunnel tube

The Commissioners of the Port of New York Authority last week voted to expedite the beginning of construction of the $85-million third tube of the Lincoln Tunnel, by authorizing the construction committee of the board to award to the lowest bidder a contract for construction of the New York land shaft and the first land section of the tube in Thirty-eighth Street East of Twelfth Ave., at the meeting of the committee to be held on Aug. 27.

Such authorization by the construction committee will make it unnecessary to delay the award of the contract until the September meeting of the board. Howard S. Cullman, Chairman of the Bi-State Agency, following the meeting, said that work is expected to begin on the shaft in mid-September.

The shaft will be 130 ft long and 60 ft wide and will extend from a point about 75 ft east of Twelfth Ave. Eventually it will be the foundation for the New York ventilation building and will contain a section of the tunnel roadway together with the fresh air and exhaust flues. The shaft, which will be about 85 ft deep, will be excavated from the surface of the street and will be constructed of reinforced concrete. During concreting operations on the river tunnel, the shaft will be used as a construction shaft to deliver materials into the river tube.

The land section of the tunnel on the contract will be immediately east of the shaft and about 360 ft long. It will be constructed by the open cut method usually used in subway construction.

BLS devises formula to index housing starts

The Bureau of Labor Statistics last week made public the formula it had devised for adjusting monthly housing starts to an annual basis.

The formula uses monthly index factors developed from the historical record of private housing starts since 1939, with the two most erratic war years omitted. Management and labor advisory committees of the Labor Department passed on the formula before it was adopted.

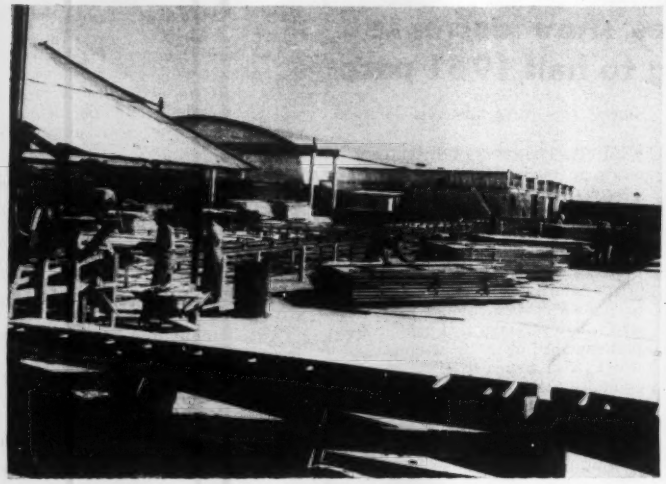
Private housing starts are the major consideration in figuring the annual rate. Public housing starts for the current fiscal year are known in advance. BLS allows an annual total of 45,000 public housing units, 34,000 of them federal and 11,000 under state and local programs.

Annual rate is figured by applying the monthly index number to private starts, multiplying by twelve, and adding the public starts. For July, the index figure factor is 115. Dividing the estimated private starts figure of 102,400 by this factor and multiplying by twelve gives an annual rate for private starts of 1,033,000. To this is added the known figure for public starts (45,000), giving the total annual rate for July of 1,088,000.

For June, BLS said, the adjusted annual rate was 1,063,000—or 137,000 less than the requirement set by Congress. Because June fell in the fiscal year just ended, the computed annual rate included a slightly higher figure for public starts, correct for that year.

Private starts in August would have to top 110,000 before the adjusted annual rate for that month could reach 1.2 million. There is little chance that private builders will start as many as 110,000 units this month.

Seasonal index numbers used by BLS to adjust monthly estimates of private housing starts range from a low of 72 in January and December to a high of 122 in May. By months, January to December, the index factors are: 72, 73, 99, 113, 122, 118, 115, 115, 108, 105, 88 and 72. The index number for August is 115, the same as for July.



Typical BAWI expansion, American Flooring Co. plant at Hazlehurst.

Seed planter, Gov. Hugh L. White

Mississippi goes industrial as 1936 seed bears fruit

Industrial wheels are turning in Mississippi today as a cure for an agricultural state's economic ills.

Factories housing the implements of Northern and Eastern manufacturing skill, have risen beside the cotton fields. Industry has not driven King Cotton from its lofty perch atop the state's economic ladder. Instead, it has joined hands with cotton to lead Mississippi to a more secure and prosperous position among her sister states.

And it has brought business for the construction industry as well, both through state-sponsored and privately-financed building, and provision of services.

Key is Mississippi's widely-accepted "Balance Agriculture With Industry" (BAWI) program which has, after more than a decade, passed from the experimental stage.

Since the state-sponsored program was first put into effect in 1936, more than 70 manufacturing plants of all sizes, ranging up to Spencer Chemical's $13-million plant, now under construction at Vicksburg, have been built within the borders of the Magnolia State. These plants are employing 16,000 persons and are providing the state with $33 million annually in payrolls.

Hundreds of additional industries have been located in the state in recent years without the aid of the BAWI law, as shown by the fact that manufacturing employment reached 94,00 persons in 1951, compared with only 46,355 in 1939.

Bank deposits have jumped 57% since 1943; retail sales have skyrocketed to $1.2 billion since 1939 for a 315% increase; wholesale trade, at $1 billion is up 318% for this period; service trades are up 227% to $167 million; utility sales have increased by 307% to $204 million; and today 2.530 billion kwh of electric power are being generated in the state, an increase of 3,676% of 1939.

• **How it all began**—Mississippi's industrial revolution had its beginning back in 1931 in the small town of Columbia. There, in the southern part of the state, the closing of several sawmills deprived the community of needed payrolls. A wealthy lumberman, Hugh L. White, who is today the state's chief executive, and a group of local businessmen decided that there was little wrong with Mississippi that payrolls couldn't cure.

They got together, subscribed funds to build a plant for a garment concern, and secured the new industry on the strength of the plant building. Their plan paid off well for Columbia, and is still paying off for Mississippi.

In 1936 Mississippi adopted White's unique plan on which he had successfully campaigned for the office of governor. The first BAWI Act expired in 1940, but by 1944 the effects of the original act were being felt so strongly that the need for another similar law for the state was obvious. The second BAWI law was passed in 1944, and provided for the administration of the plan by the Mississippi Agricultural and Industrial Board.

Able, energetic, young W. E. Barksdale has for the past seven years directed Mississippi's industrial development program under a large board of directors made up of some of the state's leading businessmen.

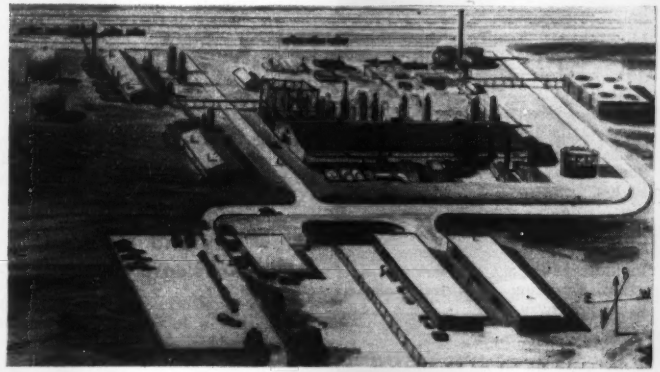
Mississippi towns and districts began taking advantage of the BAWI law by voting bonds for plants with which to encourage location of new industries.

Garment-type industries were among the first to become interested, then wood-using manufacturers and others began the southward march.

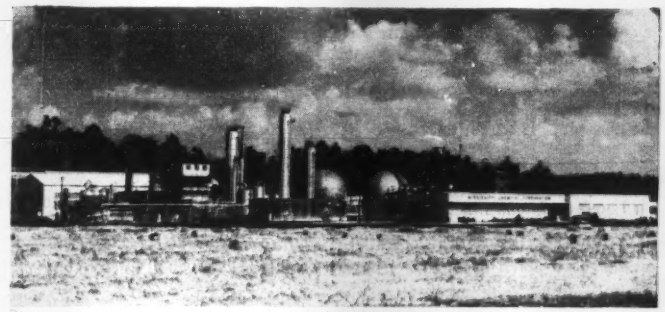
Of the 105 BAWI bond elections held throughout the state to date, the ratio of votes in favor of such issues has been 21 to 1.

• **How it works**—BAWI works like

(*Conttinued on page 89*)



Spencer Chemical's $13-million plant, being built at Vicksburg.



Mississippi Chemical, new industry, plans to double Yazoo City plant's output.

this:

Municipalities or political subdivisions desiring industries may apply to the Agricultural and Industrial Board for permission to vote bonds for such buildings. However, local governments must first show the board that:

- There are sufficient natural resources readily and economically available for the operation of the enterprise under consideration for a period of at least 10 years.
- That there is an available labor supply to furnish at least one and one-half workers for each operative job anticipated for the enterprise.
- That there are adequate property values and suitable financial conditions so that the total bonded indebtedness of the municipality does not exceed 25% of the total assessed valuation of all property within the municipality.

If these facts can be presented to the board's satisfaction, a certificate of public convenience and necessity for the bond election is granted. After bonds have been voted and sold, the community or district enters into a contract with the proposed industry and these terms must also be approved by the board.

The company must agree to lease and maintain the proposed site and buildings and agrees to pay rent to the municipality so that the municipality can fully amortize its bonds during the term of the primary lease, which term shall not exceed 25 yrs.

The company has the option to renew the lease at a nominal rental for additional terms, the total time from beginning of the primary lease not to exceed 99 yrs.

Newly established manufacturing enterprises may receive exemption from local and county ad valorem taxes for a period of five years on all property except products of the manufacturing operation.

Florida plan blocked

While Mississippi rolled ahead with its BAWI plan to encourage new industry, a similar move in Florida was damped by court action.

The Florida Supreme Court (ENR Aug. 14, p. 52) handed down a decision that may have a far-reaching—and damaging—effect.

Mississippi's present BAWI law, enacted in 1944, seemed safe on the basis of precedent, even though its constitutionality has not yet been tested.

The original BAWI act of 1936, almost identical with the 1944 law, was upheld in a test before the state supreme court. In an appeal effort, opponents of the law filed a writ of certiorari with the United States Supreme Court. This body refused to hear the appeal, contending the act was not violative of the US Constitution.

Schlitz plans $20-million brewery near Los Angeles

The Jos. Schlitz Brewing Co. has started design work on plans for a $20-million brewery in the Los Angeles area.

The new plant, to be built on a 35-acre tract near Van Nuys in the San Fernando Valley, will have an annual capacity of one million barrels of beer. This, coupled with Schlitz' recent $50-million Milwaukee expansion and additions to its Brooklyn brewery, will boost the firm's yearly output to seven million barrels.

Plans for the Los Angeles project will be six to eight months a-brewing, and no hints have been given of any departures from traditional brewery design.

California legislature agrees on school fund

The California legislature, called into special session Aug. 4 to act on a proposal to have the residents of the state vote on a school construction bond issue, finally ironed out differences on an amount and adjourned Aug. 13.

The lawmakers decided on a figure of $185 million as a compromise. This compares to $250 million originally desired by the assembly and $130 million recommended by the senate.

Watershed project planned for Ohio

A joint federal-state-local authority program for development of a complete watershed treatment program for large areas of the Ohio River basin is now under consideration, it was reported last week.

The development program would be a joint effort of the Army's Corps of Engineers, the Department of Agriculture's Soil Conservation and Forestry services and state and local authorities.

Col. Paschal N. Strong, Ohio River Division Engineer for the Corps of Engineers, said the program would be aimed to provide "all measures that would result in prevention of soil erosion, water retardation and flood control, with a possible by-product of hydroelectric power."

The State of Kentucky, Colonel Strong added, has indicated its willingness to cooperate in the program, and has suggested that the Rough River basin (tributary of the Green River and in turn the Ohio) be used as an initial experimental area for the program.

• **Part of huge program**—The cooperative plan is part of a continuing program for the Ohio River and its tributaries that has seen federal expenditure of more than $602 million since 1934 and 1935.

Federal expenditures in fiscal 1952 alone, Colonel Strong said in an annual report, amounted to $95.6 million; for fiscal 1953, they will reach an estimated $193.5 million.

Beyond this, the Corps of Engineers plans the first three new navigation structures—each intended to replace several old ones built during the original drive to canalize the Ohio to the present nine-ft depth—that will cost an estimated $154 million. Preparations for the three dams—at Markland, Ind., Strattonville, Ohio, and Greenup, Ky.—are being pushed so that construction bids may be taken as soon as funds are provided by Congress.

• **That's not all**—According to Colonel Strong's report, that's not nearly all. He pointed to what he called a "huge backlog of highly desirable flood control, flood protection and navigation projects that should be undertaken as expeditiously as possible".

This backlog includes an $84.8-million dam on the Allegheny River near the Pennsylvania-New York border; a $21.6 million dam on the Beaver River, a tributary of the Shenango; and two reservoirs, to cost a total of more than $75 million, near Sutton, W. Va., in the Kanawha River basin to supplement recently-completed Bluestone Reservoir. Also included are major reconstructions of locks and dams along a number of Ohio tributaries and the main river—biggest being a $54.8-million reconstruction of locks and Dam 41 near Louisville, Ky.

The report notes that at present, the Ohio River basin regulatory system includes 114 locks and dams in operation, providing 2,707 miles of navigable waterway.

Water becomes issue in California election

Development of water and hydroelectric power resources promises to be a hotly contested issue in the California elections this November.

The platforms of the Democratic and Republican parties differ sharply on the subject, with the former generally favoring continued federal development of such resources, and the latter advocating state control.

The Republican's water and power plank praised the action of the state legislature in making available $10 million as a down payment for possible acquisition of the Central Valleys project from the United States. The project now is operating under federal reclamation laws.

The Democratic platform said, "We cannot endorse the proposed state purchase and operation of the CVP until such time as proof is offered that state operation will not hamper an orderly development of necessary additional projects; that it will provide water upon the land at a cost as low as that provided by federal operation, and that the public interest will be fully protected."

The Republican water and power plank said the objective of putting to beneficial use the water resources of the state "must be attained without delay, not only to meet the demands of our rapidly growing population for an adequate water supply but also to provide for the generation of much needed electrical power."

The plank says, "we are unalterably opposed to any first form withdrawals by the Bureau of Reclamation which interfere with the study or construction of water and power projects within the State of California."

This section referred to recent action by the bureau in withdrawing from private entry irrigation and power reservoir sites along several California rivers.

The Democratic platform emphasizes "existing projects, valuable as they are, fail to meet the needs of water users throughout the state."

The two major parties did agree on one point. Each party urged adjudication by the United States Supreme Court of Colorado River water rights.

New England steel tax certificate expires

New England's last flame of hope for a steel industry flickered out last week when the Defense Production Administration's tax-benefit certificate expired. The certificate would have eased financing of a $228-million project envisioned by the New England Steel Development Corp., a paper organization set up by the New England Council.

The development corporation, which had been unable to arouse interest or attract financing for the proproposed integrated project, did not seek an extension of the DPA's certificate.

A certificate of necessity was first issued in 1951 to encourage New England to have a share in the post-Korea drive to boost steel output by 20 million tons a year. Proposed site for the project was the New London-Waterford area in Connecticut.

Hope for an extension of the certificate apparently died with Sen. Brien McMahon, of Connecticut, for McMahon, vowing not to let the project lapse, had been responsible for four extensions of the 1951 certificate. Now, with no hint of a renewal request in the wind, the DPA says it it will stand on its pronouncement that "this certificate is final.

Los Angeles storm drains will go before electorate

The Los Angeles County Board of Supervisors has voted to put a proposition on the November ballot calling for $179 million bond issue to cover construction of a system of lateral storm drains throughout the county.

The project would be carried out by the county Flood Control District, which has up to now left storm drains up to municipalities within the county.

The program will need only a bare majority instead of the two-thirds vote usually required for bond issues.

Combine gets $50-million integrated paper mill job

A general contract for the construction of an integrated newsprint and sulphite pulp mill in Tennessee has been let to a 31company coalition by Bowaters Southern Paper Corp.

The coalition is composed of Fraser, Brace & Co, New York; Turner Construction Co, New York; and Roane-Anderson of Tennessee.

The new mill, third of its kind to be established in the South, will call for the outlay of about $50 million.

The contract was let by Bowaters' representatives in the office of J. E. Sirrine Co, consulting engineers to the paper corporation. The Sirrine firm also was engineer for the Coosa River cooperative newsprint mill in Alabama, which is now in construction.

Grading at this site, 42 miles from Chattanooga, was started June 2 by Oman Construction Co. of Nashville, Tenn.

$27 million scheduled for sewers, disposal unit

The City of Miami, Fla., is readying a call for bids on a $27.1-million sewer system and sewage plant.

The way was cleared for the bid call when the city commission this month voted to sell two bond issues that will finance the project.

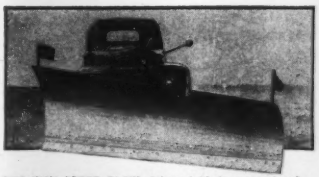
The sewer project, expected to start in early spring, is divided into two phases. One, to cost $11.1 million, will provide interceptors and pumping stations to collect raw sewage now emptied into Biscayne Bay and the Miami River.

The other, costing $16 million, will provide a force main under Biscayne Bay to carry the sewage to a disposal plant which will be erected on Virginia Key, an island two miles from the mainland, and a mile-long outfall to empty effluent from the disposal plant into the Gulf Stream.

DPA okays $81 million in expansion write-offs

The Defense Production Administration has approved 120 new or expanded defense facilities worth $81 million for rapid tax amortization between Aug. 1 and Aug. 6.

Three largest were: Proven Oil & Refining Co, Florence, Ariz, $17 million; Pittsburgh Steel Co, Monessen, Pa, $11 million; and United States Steel Co, Lorain, Ohio, $6 million.



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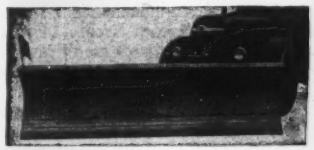

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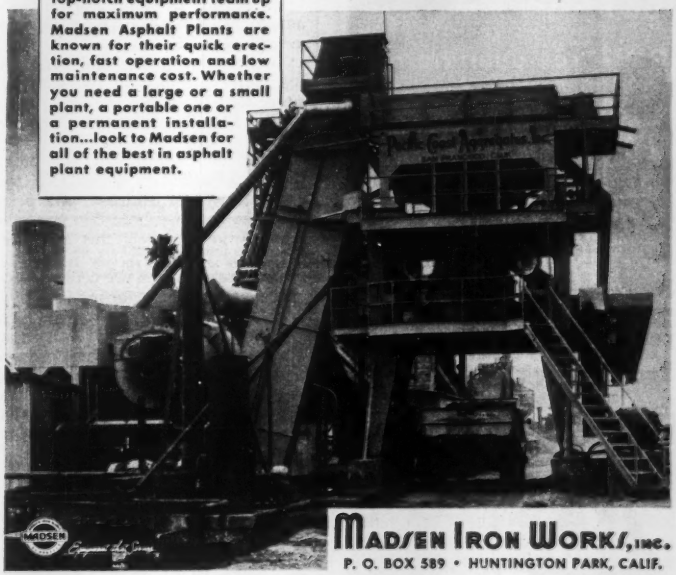

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OPS okays steel boosts

Mill prices of steel products used in construction this week went up to $4 to $31 a ton. For each product, the price increase is proportional to the man-hours of labor required in production, as computed by the Office of Price Stabilization with the help of its General Steel Products Industry Advisory Committee.

OPS issued the order specifying the allowable increases in ceiling prices. The stipulated increases follow almost exactly the recommendations of the advisory committee.

Structural shapes and bearing piles, for example, are increased $4 a ton. The same increase applies to plates. But wire rope and cord, involving much higher labor costs, are allowed to go up $31 a ton.

Overall, the specified price increases average out to the general increase of $5.20 per ton of basic carbon steel, granted to the producers in settling the steel strike. This overall increase amounts to 4.7% of the average price of $110.38 a ton for carbon steel before the strike.

That percentage doesn't apply to specific products. The ceiling price of structural at eastern and midwestern mills has been about $73 to $74 a ton. A $4 rise there means an increase of nearly 5.5%.

Steel sheet piling is granted an increase of $4.50 a ton. Sheet piles had been selling at $89; the increase amounts to just a trifle more than the average of 4.7%.

Carbon steel plates had been selling pretty generally in the same territory for $74.

The $4 increase ups that price by 5.4%.

Price of unfabricated reinforcing bars is permitted to go up $5 a ton. In the East and Midwest, mill prices for these bars had been $74 generally. The $5 jump boosts this mill price 6.75%.

Increases per ton in ceiling prices specified for other construction products include: floor plates, $4; galvanized sheets, including formed roofing and siding, $5.50; wire reinforcing mesh, $7; drawn wire, including welding wire, $7.50, and nails, $9. Depending upon type and size, standard and line pipe are granted price increases of $6 to $11 a ton.

• **Other rises**—For high-strength, low-alloy steel products, the ceiling increases are greater. Structural shapes and plates in this category are allowed an increase of $6 per net ton.

Costs to construction users will not be in direct proportion to the increases in mill prices. Under Ceiling Price Regulation 156 of July 15, fabricators are allowed to use the same kind of pricing formula as construction contractors. That formula is based on current costs for labor and materials, plus nine-tenths of the profit markup used in the base period. Most fabricators now have to pay the higher wages granted the steelworkers union, and these wages will be reflected in higher prices for fabricated steel.

Manufactured products incorporated in construction, on the other hand, won't rise in price in proportion to the amount of steel which is used in them.

Steel price increases announced this week by OPS are applicable to all mill shipments since the date of the strike settlement, July 26. The mills have been shipping on an open price basis. Customers began receiving notices of the increased prices during the week.

ENR's Construction Cost and Building Cost Indexes for August have been revised (see page 93) to include the official 20-cent-per-cwt price increase on structural shapes. The original August index values were based on the average carbon steel increase of 26 cents per cwt, the only data available at the time.

Business briefs . . .

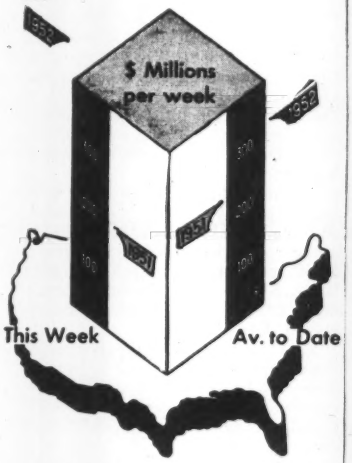
• **Mortgages decline**—Mortgage loans by mutual savings bank totaled $658 million in the first half of 1952—a drop of $217 million under the same period last year—according to the National Association of Mutual Savings Banks. In 1951, the banks made mortgage loans totaling $875 million in the first half and $833 million in the second half.

• **Hawaiian military construction**—A construction program of $20 million to create facilities for 11,000 men, the largest body of U. S. Marines to train in Hawaii since World War II, is getting underway. At the same time, the demands put on the mid-Pacific naval base by the Korean war have stepped up housing activity at the Pearl Harbor naval shipyard so that civilian workers there have doubled to almost 8,000. Construction for the Marines is centered on the northeast side of the island of Oahu. Under construction are 35 steel and concrete barracks buildings, plus two mess halls

and several regimental, battalion and company office buildings. In addition to the above, a $4-million evaluation laboratory is being built at the Lualualei branch of the Naval Ammunition Depot.

• **Unified air center**—An estimated $50 million will be spent over the next 15 or 20 years to expand Louisiana's Alvin Callender Airfield into a unified training center for reserves of the Air Force, Marines and Navy. First immediate step in the plan is construction of a bridge approach.

1366



Activity This Week

As reported to ENR (in millions of dollars)

Contracts by type of work

	This Week	Cumulative 34 wks. 1952	1951	% chge
Waterworks	$6.3	$152.1	$148.3	+3
Sewerage	11.5	191.4	211.2	−9
Bridges	4.6	254.4	218.6	+16
Highways	16.7	1,013.2	780.3	+30
Earthwork, waterways	6.9	343.2	351.8	−2
Buildings:				
Public	1,222.7	3,520.9	1,532.4	+130
Housg., pub.	0.0	486.0	548.8	−11
Housg., priv.	53.9	1,976.2	1,277.3	+55
Commercial	4.9	398.9	450.8	−12
Industrial	16.9	1,741.3	2,791.6	−38
Unclassified	21.7	872.3	1,238.8	−30
Total	**$1,366.1**	**$10,949.9**	**$9,549.9**	**+15**

NOTE: Minimum size projects included are: Waterworks and waterway projects, $34,000; other public works, $60,000; industrial buildings, $82,000; other buildings, $300,000.

ENR indexes		Base Year = 100 1913	1926	1949
Constr. cost.	Aug.	583.69	280.58	122.86
	July	570.65	274.31	119.63
Bldg. cost	Aug.	422.36	228.32	120.06
	July	414.46	224.04	117.81
Volume	July	904	367	261

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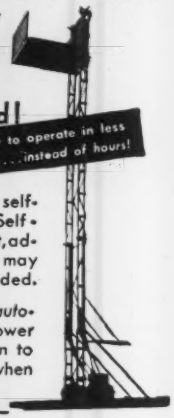

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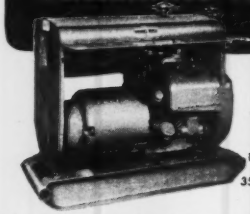

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UNIT PRICES

Earth-fill dam, Massachusetts

Designed to supplement the water supply for Worcester, Mass., the $767,100 Quinapoxet River Dam is a rolled selected earth fill structure with concrete spillway. Water passing over the spillway will flow to the river bed below the dam through a 400-ft open reinforced concrete channel. Two 36-in. conduits through the dam will be used only for handling stream flow during construction and for infrequent blowing off of bottom water.

Design data:

Drainage area	19.85 sq mi
Reservoir capacity	1,200 mg
Water surface area	280 acres
Spillway length	200 ft
Spillway crest elevation	731 ft
Height, flashboards	2 ft
Water surface on collapse of flashboard, el	733
Water surface when passing design flood, el	733.5
Design flood at spillway	4,300 ft/s
Elevation dam crest	740
Width of crest	20 ft.
Maximum height	40 ft.
Maximum width	180 ft

Metcalf and Eddy, of Boston, are the consultants for the City of Worcester.

Minimum hourly wages to be paid are: Equipment operators, $1.80 to $2.80; bricklayer, cement finisher, stone mason, catch basin & manhole builder, $2.89; carpenter, $2.23; pile driver & cofferdam builder, $2.475; iron workers, $2.55; and common laborer, $1.475.

Work began in July and must be complete 365 calendar days.

Bidders include:

1C	Coleman Bros. Corp., Boston, Mass.	$767,100
2	The Henley-Lundgren Co. Inc., Shrewbury, Mass.	$899,518
3	Campanella & Cardi Constr. Co., Hillsgrove, R. I.	$998,785

Bids: 7-1-52 Items	Unit	Quantity	Unit Prices 1C	2
Earth embankment, impervious	cy	23,000	$0.80	$1.50
pervious	cy	24,500	0.80	1.50
random	cy	13,000	0.80	1.50
Railroad embankment	cy	38,800	0.80	0.90
Additional rolling	unit	35,000*	0.20	0.02
Overhaul	unit	8,000*	0.50	0.04
Washed stone	cy	2,400	5.00	6.00
Riprap, 36" on RR embank.	sy	1,200	8.00	6.00
on dam	sy	1,200	8.00	6.00
24"	sy	4,100	6.00	5.00
18"	sy	2,900	4.00	4.00
Stone gutters	lf	560	3.00	8.00
Strip topsoil & debris	cy	32,000	1.00	2.50
muck & peat along RR	cy	2,000	1.00	1.50
Exc. cut-off trench & drain conduit, 0' to 10'	cy	5,600	3.00	3.50
Exc. spillway & borrow	cy	123,000	1.25	1.50
misc. 0' to 10'	cy	1,500	2.00	4.00
below 10'	cy	500*	5.00	7.50
General rock exc.	cy	7,500*	4.00	3.25
Handling all water at dam & spillway	ls	1	$47,000	$50,000
Diversion of Carrs Brook	ls	1	10,000	5,000
Handling water at all other locations	ls	1	25,000	20,000
Loaming	cy	4,700	$2.50	$3.00
Grassing	sy	19,000	0.20	0.10
Sodding	sy	800*	2.00	1.50
Conc Masonry, class AA	cy	3,900	40.00	45.00
class B	cy	255	30.00	30.00
Conc reinforcement	lb	275,000	0.11	0.12
Conc cylinder pipe, 36"	lf	579	35.00	40.00
Vitrified clay pipe dr, 4"	lf	450	1.00	1.00
6"	lf	400	1.50	1.00
8"	lf	600	2.50	1.25
12"	lf	130	4.00	2.00
CCM culv pipe, 24"	lf	100	8.00	8.00
18"	lf	70	6.00	6.00
Misc work	ls	1	$18,000	$21,250
Asphalt membrane	sy	3,900	$1.00	$1.00
Chain-link fence	lf	3,000	5.00	3.75
Lumber left in place	Mfbm	10*	300.00	400.00
Move boring rig to & from aite	ea	2	200.00	100.00
Wash borings	lf	250	4.00	3.50
Core borings	lf	75*	15.00	15.00
Piezometers	ea	8	500.00	250.00
Cleaning up	ls	1	$1,000	$5,000

* Quantity assumed for bid comparison

Airport paving, Texas

Portland cement concrete took the contract for 98,000 sq yd of paving for an apron extension at Harlingen Air Force Base, Texas, on a bid 2% below the low for asphaltic concrete. Pavement is to be laid on a flexible base, with bituminous prime coat, tack coat and binder.

Minimum hourly wages to be paid on the project are: Air tool operator, $1.00; asphalt heater and raker, $0.90; asphalt shovelers, $0.75; carpenters, $1.50; cement finishers, $1.10; pipe layers, $1.25; power equipment operators, $0.75; to $2.00; and truck drivers, $0.75 to $0.80.

Work is under the supervision of the Corps of Engineers, Galveston, Texas. It began in June and must be complete in 150 calendar days with liquidated damages set at $100 per day.

Bidders include:

1C	E. B. Darby & Co. Assoc., Pharr, Texas	$565,065
2	H. B. Zachry Co., San Antonio, Texas	580,332
3	Brown & Root, Inc., Houston, Texas	586,546

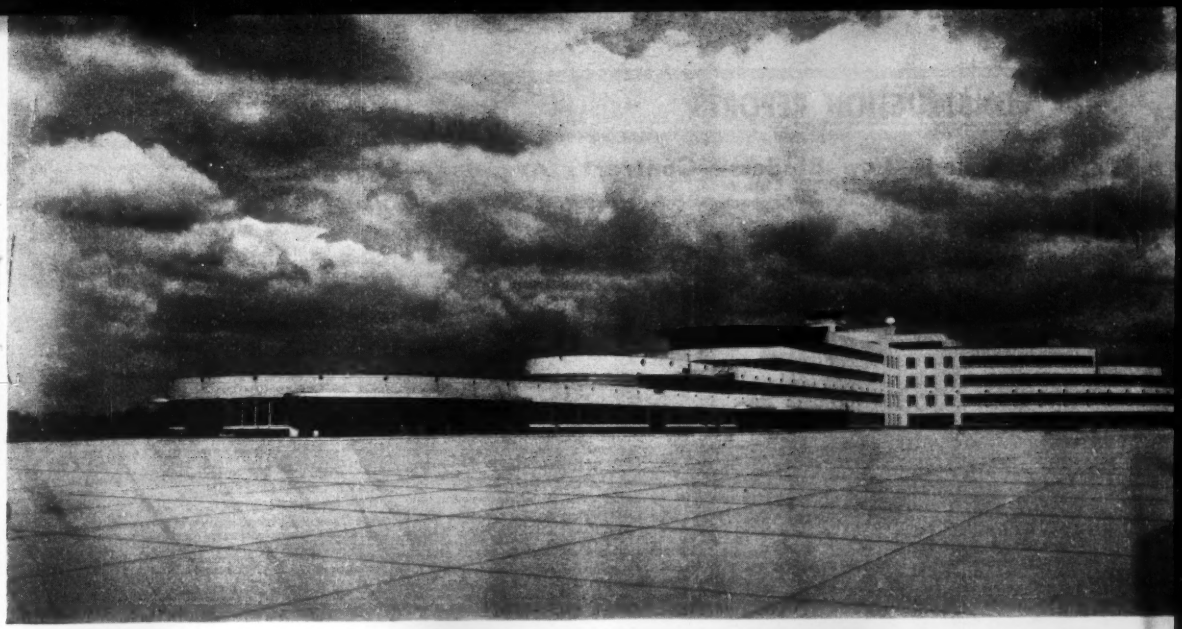
Concrete pavement

Bids: 6-10-52 Items	Unit	Quantity	Unit Prices 1C	2
Exc, inc wast & strip	cy	79,000	$0.51	$0.40
Pavement, concrete	sy	150,000	2.61	2.62
Cement	bbl	31,600	3.55	4.22
Conc pipe storm dr, 24"	lf	160	4.50	5.50
Headwall	ls	1	75.00	50.00
Lowering exist inlets	ls	1	100.00	240.00
Extension of ducts	lf	100	3.00	5.60
Electrical manhole	ea	4	350.00	390.00
Tie down anchors	ea	1,500	6.00	8.40
Relocation of exist bldgs	ls	1	$7,000	$2,425
Rem exist poles, storm drs, culv. dr struct, fire plug & water riser, steel range & asphalt pave, gr rds & misc conc fndns	ls		2,500	4,065

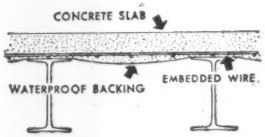
Alternate—asphaltic concrete pavement

LB	Heldefels Bros., Corpus Christi, Texas	$577,393
2	H. B. Zachry Co., San Antonio, Texas	582,370

Items	Unit	Quantity	Unit Prices 1C	2
Exc, inc wast & strip	cy	65,800	$0.55	$0.40
Flexible base, 8" compact	sy	152,700	1.96	2.22
Bit prime coat	gal	45,800	0.16	0.18
tack coat	gal	15,300	0.17	0.19
Asph conc binder course	t	11,550	7.20	6.20
surface course	t	11,700	7.20	6.20
Asph cmt	gal	281,250	0.13	0.14
Conc pipe storm dr, 24"	lf	160	5.40	5.50
Headwall	ls	1	90.00	50.00
Lowering exist inlets	ls	1	165.00	240.00
Extension of ducts	lf	100	12.00	5.60
Electrical manhole	ea	4	300.00	390.00
Tie down anchors	ea	1,500	6.00	8.40
Relocation of exist bldgs	ls	1	$11,800	$2,425
Rem of exist poles, etc	ls	1	3,700	4,065



mammoth decks of this huge new air terminal poured over **Steeltex Floor Lath**



Note, *in the cross section and closeup that the weight of the wet concrete forces the backing away, which permits the galvanized welded wire mesh to assume its proper position in the slab. Steeltex Floor Lath also performs two other functions. It permits work on the floor below while pouring is in progress and retains moisture to assist proper curing.*

Greater Pittsburgh Airport, destined to become an inland hub of international air traffic, is greater in size than LaGuardia and National Airports combined. The terminal, aptly described as a city within a city, is so extensive that it is able to contain a hotel, theatre, bank, public garage, nightclub, shops and restaurants in addition to its normal facilities.

It was no mere coincidence that the broad concrete decks necessary to carry this load should be poured over Steeltex Floor Lath. Steeltex offers speed and economy because it may be rapidly installed and work may continue on the floor below while pouring is in progress. It insures high quality and safety because the galvanized welded wire mesh is properly embedded and the slab is properly cured because the tough waterproofed backing retains the water, thus insuring the correct water-cement ratio. For detailed information about Steeltex Floor Lath, the combined form and reinforcing, see our catalog in Sweet's or write for catalog D.S. 133, Dept. ENR, Pittsburgh Steel Products Co., Grant Bldg., Pittsburgh 30, Pa.

Pittsburgh Steel Products Co.
A Subsidiary of Pittsburgh Steel Company

CONSTRUCTION REPORTS

Bids Asked—Low Bidders—Contracts Awarded—First Section

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y.
ELSIE EAVES, Manager — *J. A. MAHONEY, Reports* — *M. R. ROESSLER, Statistics*

NEW ENGLAND

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS
BRIDGES
August 26, Massachusetts
STREETS AND ROADS
August 26, Massachusetts

BIDS ASKED—BUILDINGS

Mass., Worcester—SCHOOL—B.A. 9/5—City, School Dpt., 32 Franklin St., 1 and 2 story, brick, steel, concrete Junior High School Burncoat St. near Rexhame Rd. Plans deposit $100. CD 4/16.

N. H., Dover—HOSPITAL—B.A. 9/9—City, City Hall, Fed. Proj. NH 27-E-59, Dover City Hospital and alterations $650,000. J. A. Hamilton Assocs., 428 S.E. Walnut St., Minneapolis, Minn., hospital consultants. Irving W. Hersey & Assocs., Dover Rd., Durham, archts. CD 6/23.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **MASSACHUSETTS**—Commonwealth of **Mass., Dpt. P. Wks.**, 100 Nashua St., Boston.

Harris Structural Steel Co., Inc., 419 Fourth Ave., New York, N. Y. LB. **$2,991,880**, est. $2,700,000. superstructure of multi-span across Merrimack River, UI 62 (8), Amesbury-Newburyport. Bids Aug. 12. CD 7/17.

Crandell Engineering Co., 261 Franklin St., Boston Mass. LB. **$321,960**, est. $400,000. strengthening piers Boston-Charlestown Bridge, BOSTON, MASS. City, Dpt. P. Wks., City Hall Annex, Boston, Mass. Bids Aug. 7. CD 8/1.

▲ **RHODE ISLAND**—State Div. Purchases, State House Smith St., Providence.

S & M Constr. Co., 30 Salmon St., Providence, R. I. CA. **$1,192,751**. Contr. 1 Tower Hill Rd. wid'n., North Kingston and South Kingston. Bids July 9, awarded Aug. 5. CD 7/15, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Granger Constr. Co., Inc.**, 306 Main St., Worcester Mass. CA. Total est. over **$1,000,000**. CHURCH and bell tower, SPENCER, MASS. St. Joseph's Abbey, Rt. Rev. M. Edmund Futterer, O.C.S.O. Abbott, Aita Crest Rd., Spencer, Mass. Bids June 24. CD 6/17.

J. J. Powers Co., 238 Main St., Cambridge Mass. CA. Est. $550,000. Wendell P. Clark MEMORIAL BLDG., WINCHENDON, MASS. Wendell P. Clark Memorial Assoc., c/o Hale & Dorr, 60 State St., Boston, Mass. William G. Upham, 698 Washington St., Norwood, Mass., archt.

▲ **Gilbane Building Co.**, 90 Calverly St., Providence, R. I. LB. **$2,192,000**. Junior High SCHOOL, Park Ave., CRANSTON, R. I. City, City Hall, CRANSTON, R. I. Bids Aug. 12. CD 7/11.

Earl C. Wheeler, 15 Lewis St., Hartford, Conn., LB, **$340,548**, Conn. 52-C-3-A, SCHOOL, Poquonnock Bridge Rte. 1, GROTON, CONN. Town School Bldg. Comm., Groton, Conn. Bids Aug. 5. CD 7/24.

MIDDLE ATLANTIC

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS
BRIDGES
Aug. 26, Maryland — Sept. 3, New Jersey & Pennsylvania — Sept. 4, New York
STREETS AND ROADS
Aug. 29, Delaware, Pennsylvania — Sept. 4, New York

D. C., Wash.—B.A. 9/25—District of Columbia, Director of Sanitary Engineering, District Bldg., 14 and E Sts. N. W., Zone 4, sludge disposal plant, structures, equipment, Unit 17 and Chimney Unit (18), Sewage Treatment Plant. Plans deposit $50, adv. ENR 8/21. CD 7/14/44.

BIDS ASKED—BUILDINGS

Pa., King of Prussia—SCHOOL—B.A. 8/25—Upper Merion Twp. School Dist., King of Prussia, school, $650,000. Eastern Engineering Co., 836 Elm St., Reading archts. CD 9/13/51.

N. Y., Brooklyn—HOUSING—B.A. 8/26—New York City Housing Auth., 63 Park Row, New York, Zone 38, foundation and general constr., heating, ventilating, electrical work; plumbing, furnishing, erecting elevators for Brevoort Houses, Proj. No. NY-5-17, Sect I, incl. Bldgs. No. 1 to 6 (inclusive) and garage in area bounded generally by Marion St., Ralph Ave., Fulton St. and Patchen Ave., Brooklyn Boro. Plans deposit $75, $25 elevator. Extended date. CD 7/28.

Pa., Pottstown—HOUSING—B.A. 8/27—Montgomery County Housing Auth., Pottstown, North Hills Housing. $500,000. Extended date. George M. Ewing, Western Saving Fund Bldg., Phila., Pa., archt. CD 7/31.

N. J., Tenafly—SCHOOL—B.A. 9/3—Bd. Educ., Tenafly Boro, elementary school, $400,000.

N. Y., New York—HOUSING IMPRVS.—B.A. 9/3—New York City Housing Auth., 63 Park Row, street, yard imprvs., NYS-25, Section II, portions of Sect. 1, topsoil, planting, NYS-25, Sect. II, portions of Sect. 1, Governor Alfred E. Smith Houses, in area bounded by St. James Pl., Madison St., Catherine St., Catherine Slip, South St. and new street southwest of proj. Plans deposit $25.

▲ **Pa., York**—HOUSING—B.A. 9/9—York Housing Auth., 360 W. College Ave., Parkway Homes Housing $2,250,000, Spotz & Hamme, 123 E. Phila. Ave., York, archts.; Codorous Homes Housing, $712,298, Harry Leaker, Schmidt Bldg., York, Pa., archt. Carl Davidson Inc., 25 E. Phila. St., York, engr. for both.

† **N. J., Camden**—ARMORY, etc.—B.A. On Or About 9/12—U. S. Eng., 121 N. Broad St., Phila. 1, Pa., O. R. C. Armory, motor vehicle storage shed, utilities, site improvements, ENG 36-109-53-38. CD 5/22.

▲ **Pa., Bristol**—HOSPITAL, etc.—B.A. 9/12—Lower Bucks County Hospital, 904 4 Ave., Croyden, hospital, garage, laundry, power house, paving, etc. $1,500,000. Horace B. Nicholson, 213 S. Broad St., Phila. Pa., engr. Bolton Martin & White, 266 S. 17 St., Phila., Pa., archts. CD 2/12/51.

† **N. J., Trenton**—ARMORY, etc.—B.A. On Or About 9/17—U. S. Eng., 121 N. Broad St., Phila. 1, Pa., O. R. C. armory, motor vehicle storage shed, utilities, site imprvs., ENG 36-109-53-39. CD 6/10.

Pa., Phila.—MANUFACTURING—Bids Asked—Heintz Mfg. Co., Front St. and Olney Ave., Phila., two 1 and 2 story, brick, steel, 70,000 sq. ft. manufacturing bldg. addns. $500,000. Louis H. Doane, Penna. R. R. Bldg., Wilmington, Del., engr. J. Linerd Conarroe, 97 Bethlehem Pike, Phila., Pa., archt.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **Jos. Bennett Constr. Co.**, 101 Newbury St., Boston, Mass., LB, $110,278, est. $98,464. addnl. bldgs., Part II, family housing technical training bldg. and Q. M. gasoline station, Niagara Falls Air Force Base, Inv. No. Eng 30-075-52-2, NIAGARA FALLS, N. Y. U. S. Eng., 80 Lafayette St., New York, 13, N. Y. Bids Aug. 5. CD 6/30.

PROJECTS COVERED

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $34,000; other public works $60,000; industrial buildings $82,000; other buildings $300,000.

Classes of Construction
(Name in order of Listing)

Water Supply
Sewers, Waste Disposal
Bridges
Streets & Roads
Earthwork, Waterways
Latin America
Public Buildings
Commercial Buildings
Industrial Buildings
Unclassified

Stages Reported

PROPOSED WORK: Including appointment of engineers or architects.

BIDS ASKED (new announcements only). For full calendar, see also preceding issues of ENR.

LOW BIDDERS: On jobs below $500,000 value all low bidder news will be the final reports published on the projects inviolved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: Except awards to low bidders previously reported in low bidder stage.

Dates shown are of issue in which last previous report was published.

Symbols and Abbreviations Include:

† Federal Government
▲ Project of $1,000,000 or over.
B.A. Bids Asked
ENR Engineering News-Record
CD Engineering News-Record Construction Daily

† **E. E. Totonelly & Son, Inc.**, 178 S. Robinson Ave., Newburgh N. Y., LB, **$166,488**, rehabilitation of Camp Buckner Water Supply at U. S. Military Academy, WEST POINT, N. Y. U. S. Eng., 80

▲ **Buckley & Co.**, 1321 Juniper St., Phila., Pa., LB, **$1,517,573**, general contract sewage treatment plant, storm sewers, pipe lines, grading, road work; LB, $195,196, Cobbs Creek Outfall Sewer, DARBY, PA. Darby Creek Joint Auth., Upper Darby, Pa. Bids Aug. 6. CD 7/9.

Stofflett & Tillotson, 2043 Eastburn Ave., Phila., Pa., CA, **$974,817**, sewage treatment plant, grading, road constr., walks, NORWOOD, PA. Muckinipates Auth., Sharon Hill, Pa. CD 7/15, under LB.

† **Frank H. Wilson**, 125 Coulter Ave., Ardmore, Pa., LB, **$969,695**, 6 bachelor officers quarters, Dover Air Force Base, DOVER, DEL. U. S. Eng., 121 N. Broad St., Phila., Pa. Bids Aug. 5. CD 7/10.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

Rubin Constr. Co., 11 W. 42 St., New York, N. Y., LB, **$387,000**, general contract Kings Highway Regional Branch LIBRARY, Ocean Ave. south of Kings Hy., BROOKLYN, N. Y. Dpt. P. Wks., Municipal Bldg., New York, 7, N. Y. Bids Aug. 6. CD 7/23.

▲ **Casper & Weis**, 6730 Old York Rd., Phila., Pa., Separate Contracts, **$4,900,000**, RESIDENTIAL DEVELOPMENT, Water St., MT. HOLLY, N. J. Dante J. D'Anastasio, 1815 Federal St., Camden, N. J., archt.

▲ **Malam Plumbing Co., Inc.**, 25-09 42 Rd., Long Island City, N. Y., CA, **$3,232,000**, TANK FARM, Veterans Administration Supply Depot, SOMERVILLE, N. J. General Services Admin., Pub. Bldgs. Service, General Services Bldg., Wash. 25, D. C. Bids July 15, awarded July 31. CD 7/25, under LB.

▲ **Charles F. Rohleder**, 600 Schuylkill Ave., Phila., Pa., LB, **$1,192,492**. Penn Ridge High SCHOOL and paving work, BLOOMING GLEN, PA. Upper Bucks County Joint School Auth., Perkasie, Pa. Bids Aug. 6. CD 7/10.

▲ **Construction Service Co.**, 2409 N. Broad St., Phila., Pa., Separate Contracts, **$3,500,000** RESIDENTIAL DEVELOPMENT, Greenwood Ave., ELKINS PARK, PA. Lewis J. Cowan, 1505 Pine St., Phila., Pa., archt.

J. Cutler & Son Co., 1615 Chelten Ave., Phila., Pa., Separate Contracts, **$800,000**, RESIDENTIAL DEVELOPMENT Tyson Ave., PHILA., PA. S. Sherwin Rochles, 5664 Diamond St., Phila., Pa., archt.

▲ **Stenton Hills, Inc.**, 6730 Old York Rd., Phila., Pa., Separate Contracts, **$1,000,000**, RESIDENTIAL DEVELOPMENT, Temple Rd., PHILA., PA.

Strathmore Corp., Woodward Bldg., Wash., D. C. Owner Builds. Est. $700,000. two 3 story APARTMENT bldgs., 84 units, Bradley Blvd., BETHSEDA, MD. Morton W. Noble and E. W. Dreyfuss, 1019 15 St. N. W., Wash., D. C., archts.

▲ **Westview Constr. Co.**, 1004 W. 25 St., Wilmington, Del., Separate Contracts, **$1,000,000** RESIDENTIAL DEVELOPMENT, Burnside Dr., WILMINGTON, DEL.

SOUTH

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS
STREETS AND ROADS
August 29, Tennessee

Ala., Columbiana—NATURAL GAS SYSTEM—B.A. 8/27—City, natural gas system. Plans deposit $25. J. W. Goodwin Engr. Co., 2111 7 Ave. S., Birmingham, engr.

† **Ky., Lexington**—B.A. 8/28—U. S. Eng., 830 W. Broadway, Louisville, replacing wooden water mains, with either c.i. or asbestos pipe, Blue Grass Ordnance Depot. $300,000. Plans deposit $15. CD 9/28, under Public Bldgs.

BIDS ASKED—BUILDINGS

Ala., Birmingham—CHURCH—B.A. After 9/1—Shadyside Methodist Church, c/o Geo. P. Turner, archt., American Life Bldg., church. $300,000.

La., Gretna—RECREATIONAL CENTER—B.A. 9/3—Bd. Comm. Jefferson Parish Community Center, community recreational center bldg., South Dr. $350,000. Plans deposit $30. Extended date. T. Edward Ernst, 307 Perdido St., New Orleans, engr. CD 7/24.

N. C., Raleigh—HEALTH—B.A. 9/9—P. Bldgs. & Grounds, Geo. Cherry, supt., 4 story, part bsmnt. state health bldg. for State Bd. Health, on Caswell Square, $600,000. Plans deposit $50. Wm. H. Deitrick, Inc., 115 W. Morgan St., archt. CD 9/29/49.

Va., Norfolk—HOME FOR THE AGED—B.A. 9/9—Mary N. Ballentine Home, Granby St., Norfolk, 2 story, brick, concrete, masonry, rein.-con., home for the aged, $500,000. Plans deposit $20. Oliver & Smith, 409 Yarmouth St., archts. CD 7/24.

▲ Miss., Jackson—MEDICAL SCHOOL, etc.—B.A. 10/15—State Bldg. Comn., New Capitol Bldg., general contract, medical school and teaching hospital, $8,500,000, E. L. Malvaney, R. W. Naef & Overstreet, Woolfolk State Office Bldg., archts. CD 4/30.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

L. S. Sorber & Co., Vienna, Va. LB $113,648. inflow and outflow pipes between pumping station, new Alexandria and sewage treatment plant, FAIRFAX, VA. Sanitary Engineering Dpt., Fairfax Co., Fairfax, Va. Bids Aug. 7. CD 7/9.

† Paul Smith Constr. Co., Box 157, Buena Vista Station, Miami, Fla., LB. $256,790, jet aviation fuel storage and roads at Naval Air Station, Boca Chica Field, NOY 28563, KEY WEST, FLA. Officer in Charge of Construction, Box 465, Naval Base, S. C. Bids Aug. 6. CD 7/9.

LOUISIANA—State Hy. Dpt., Highway Office Bldg., Baton Rouge,

Paul A. Lambert, Simmesport, La. LB $130,660. base course grav. spot-dumped Hodge Oak Grove Hy., State Rte. 101, Purchase Requisition No. 41842A, S. P. 43-02-05, Bienville Parish. Bids Aug. 6. CD 7/29.

† U. S. Eng., foot of Prytania St., New Orleans 9, La. rejected bids Bayou Rigolette Floodgate, Inv. 52-193, Rapides Parish, LOUISIANA. LB $422,781. CD 5/27, under LB.

Horace B. Rickey, P.O. Box 218, Lafayette, La. CA $233,333. water treatment plant addns., LAFAYETTE, LA. City, Lafayette, La. Bids Aug. 5. CD 7/24.

KENTUCKY—Commonwealth of Ky., Frankfort,

▲ George H. Cheek Constr. Co., McClure Bldg., Frankfort, Ky. LB. $95,647, traffic bound river grav. 4.895 mi. Vanceburg-Concord Rd., S 421 (5), RS 68-14, Lewis Co.; LB. $86,776, reconstr. local bank or creek grav. 4.109 mi Turkey Creek Rd., RS 13-747, Breathitt Co.;

Greer Bros. & Young, London, Ky. LB. $59,579. reconstr. traffic bound limestone 3.169 mi. Cane Creek Rd., RS 63-221, Laurel Co.;

Carey Constr. Co., Citizens Bank Bldg., Lexington, Ky. and H. C. Adams, 968 Delaware Ave., Lexington, Ky. LB. $202,033. bit. surf. Class I 3.502 mi., Lancaster-Nicholasville Rd., S 366 (2), SP 40-146, Garrard Co.;

Geoghegan & Mathis, Bardstown, Ky. LB. $66,999. reconstr. traffic bound limestone 4.643 mi. Badger-Attila-Gleanings Rd., RS 62-281, Larue Co.;

Kentucky Road Oiling Co., Frankfort, Ky. LB. $258,-821. b. conc. binder surf. Class I 3.597 mi. Grayson-Ashland Rd., FI 4 (7), FI 8 (9), SP 22-28, 10-164, Carter and Boyd Counties;

Breslin Constr. Co., 1433 S. Preston St., Louisville, Ky. LB. $237,025. b. conc. surf. Class I 10.748 mi. Leitchfield-Fordsville Rd., S 462 (4), SP 43-255, Grayson Co.;

State Contg. & Stone Co., Hartford, Ky. LB. $560,464. b. conc. surf. Class I 13.05 mi. Central City-Livermore Rd., F 368 (3), SP 75-202, 89-243, 89-263, McLean and Muhlenberg Counties; LB. $234,855. bit. surf. Class I, 11.132 mi. Hartford-Fordsville Rd., S 473 (2), SP 92-24, Ohio Co.; LB. $81,850, bit. surf. Class C-1 20.8 mi. Logan Co.;

Kelly Contg. Co., Fincastle Bldg., Louisville, Ky. LB. $119,098. b. conc. surf. Class I 2.3 mi. Louisville-Shepherdsville Rd., S 478 (4), SP 15-14, Bullitt Co.; LB. $110,700 b. conc. surf. Class I, waterbound macad base 5.345 mi. London-Barbourville Rd., S 150 (4), SP 63-91, Laurel Co.;

Robert M. Robinson, Owensboro, Ky. LB. $80,184. bit. surf. Class C-1 8.171 mi. SP 89-223 and RS 89-183, Muhlenberg Co.;

Middle West Roads Co., Noblesville, Ind. LB. $173,462. bit. surf. Class I waterbound macad. base 2.222 mi. Brandenburg-Tip Top Rd., S 65 (2), SP 82-23, Meade Co. Bids Aug. 1. CD 7/16.

Donlon Constr. Co., 1005 Richardson Ave., Nashville, Tenn. LB $203,860, W.W. imprvs., SCOTTSVILLE, KY. City, Scottsville, Ky. Jones & Donan, Madisonville, Ky., engrs. Bids July 24. CD 11/15/51.

BUILDINGS

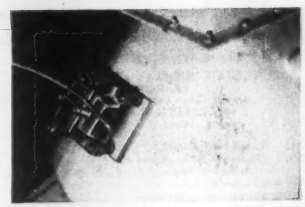
LOW BIDS AND CONTRACTS

Eugene Simpson & Bros., 300 Montgomery St., Alexandria, Va. CA. $323,064. 2 story, masonry SCHOOL and CONVENT addn., ALEXANDRIA, VA. St. Mary's Convent, 312 S. Royal St., Alexandria, Va. Gleeson & Mulrooney, 1612 Market St., Phila., Pa., archts. Chas. H. Wolf, Blue Cross Bldg., Phila., Pa., engr.

▲ William E. Whitt, Triangle Constr. Corp., Mayflower Apartments, Virginia Beach, Va., Owner Builds, $2,-300,000 frame, Chesapeake Manor Gardens Housing Development, NORFOLK, VA. E. Ray Pentecost, Jr., Colonia Ave. and 21 St., Norfolk, Va., archt.

Farnsworth & Chambers Co., Inc., 3018 Leeland St., Houston, Tex. CA $407,942. 1 story, brick elementary SCHOOL, Port Sulphur, POINTE A LA HACHE, LA. Plaquemines Parish School Bd., Pointe-a-la-Hache, La. Bids Aug. 5. CD 7/24.

▲ Winfrey Bros, Inc., 123 Burwell Ave., Knoxville, Tenn. CA $1,500,000. 7 story, brick, steel Kentucky HOTEL, addn., 5 and Walnut Sts., LOUISVILLE, KY. J. Graham Brown, Brown Hotel, Louisville, Ky. Awarded Aug. 11. CD 3/21.



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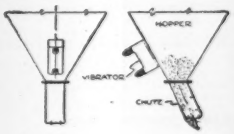

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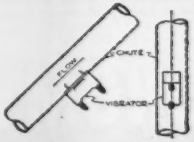

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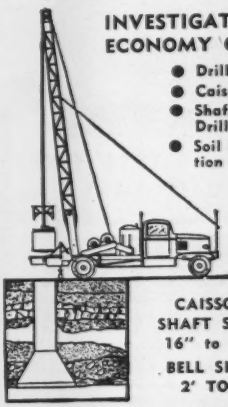

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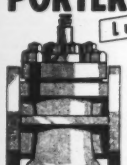

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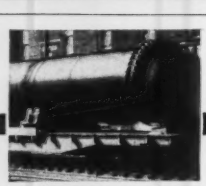

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MIDDLE WEST

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS
BRIDGES
August 26, Indiana, Wisconsin
STREETS AND ROADS
August 26, Indiana, Wisconsin September 16, Ohio

† **Ill., Rantoul**—SUB-STATION—B.A. 8/29—U. S. Eng., 520 Merchandise Mart, Chicago, 54, Ill., 69 kv electric sub-station Chanute Air Force Base. $440,000. CD 2/25, under LB.

BIDS ASKED—BUILDINGS

▲ **Mich., Port Huron**—CITY-COUNTY—B.A. 9/16—City of Port Huron and St. Clair County, Port Huron, 3 story, brick, steel, concrete city-county bldg. jail facilities, $2,200,000. Plans deposit $65 refundable, Smith-Hinchman & Grylls, Inc., 800 Marquette Bldg., Detroit, engrs. Wyeth & Harman, Inc., 1602 Military St., archt. CD 5/19.

SOON LETS CONTRACT—HEAVY CONSTRUCTION

▲ **O., Columbus**—RAMP—North American Aviation, Inc., 43,000 E. Fifth Ave., Columbus, soon lets contract 300x1000 ft., concrete ramp to expedite existing NA's Sabrejets, 1,000 ft. runway, $1,000,000.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **Ohio Fuel Gas Co.,** 99 N. Front St., Columbus 35, O., Own Forces, **$5,400,000,** increasing capacity of 5 underground storage areas from 100 billion to 113 billion cu. ft. of gas by drilling, 70 new wells, reconditioning 30 old wells, for storage purposes, Ashland, Richland, Lorain, Medina, Knox and Hocking Counties; **$61,000,** replacing 9 sections, 10,000 ft. 20 in. high pressure pipe line which will run about 10 million cu. ft. gas daily to company's northern Ohio customers, Parma, Cuyahoga Co., OHIO. CD 8/5.

▲ † **Madsen Constr. Co.,** 2110 Nicollet Ave., Minneapolis, Minn., and **Steenberg Constr. Co.,** 1371 Marshall Ave., St. Paul, Minn., LB, **$5,375,780,** 2,000 ft. concrete, brick warehouse, Wilkins 831st Air Force Specialized Depot, Eng 46-022-52-121, SHELBY, O. U. S. Eng., 237 Fourth Ave., Huntington 18, W. Va. Bids Aug. 5. CD 7/18.

▲ **INDIANA**—State Hy. Comn., State House Annex Indianapolis, Zone 4,

Brooks Constr. Co., 1123 Barthold St., Fort Wayne, Ind., LB, **$212,960,** est. $263,879 c.conc. base wid'n. b.conc. resurf. 15.565 mi. State Rd. 31 Noblesville to Anderson and St. Rd. 38 s.e. from St. Rd. 32 E of Noblesville, Hamilton and Madison Counties; LB **$187,026,** est. $228,089, b.conc. resurf. 10.8 mi. State Rd. 9 from north of Marion to s.w. of Mt. Etna Grant Co.; LB **$290,122,** est. $378,665, c.conc. base wid'n. b.conc. resurf. 13.37 mi. State Rds. 1, 37 and 3 in Fort Wayne and on to DeKalb Co. line, Fort Wayne Allen Co.;

Rieth-Riley Constr. Co., P. O. Box 477, Goshen, Ind., LB, **$923,773,** est. $1,003,583 b.conc. pavement, resurf. 5.298 mi. State Rd. 31 Columbus to south of Johnson Co. line, Bartholomew Co.; LB **$174,098,** est. $212,858 mi. conc. base wid'n, b.conc. resurf. 7.29 mi. U.S. Rd. 33 and State Rd. 331 in Mishawaka, also U.S. Rd. 20 and Lincoln Hy. in South Bend, St. Joseph Co.;

Grace Constr. Co., Inc., 1915 Lincoln Tower, Fort Wayne, Ind. LB, **$93,348,** est. $105,794, conc. base, wid'n., b.conc. resurf. 4.26 mi. State Rds. 5 and 9 in Huntington, Huntington Co.;

Seneca Petroleum Co., Inc., 439 W. 33 St., Chicago, Ill., LB, **$81,112,** est. $85,184 c.conc. base wid'n., b.conc. resurf. 7.29 mi. U.S. Rds. 33 and 20, also State Rd. 331 in La Porte, La Porte Co.;

Hartong & Co., East Gary, Ind., LB, **$159,508,** b.conc. resurf. 3.95 mi. U.S. Rds. 151 and 20 Hammond to East Chicago and in Whiting, Lake Co. Bids Aug. 12. CD 7/28.

ILLINOIS—State Div. Hys., Springfield,

J. D. Barter Constr. Co., 215 S. Jackson St., Harrisburg, Ill., LB, **$189,441,** substructure and structural steel for bridge Ill. 160 Clay Co.;

Michael J. McDermott & Co., 30 N. La Salle St., Chicago, 2, Ill., LB, **$214,213,** 2 rein.-con. slab bridge superstructures and 1 rein.-con. deck girder superstructure on U.S. 45 and 54, Iroquois Co. Bids Aug. 6. CD 8/4.

Mid-States Constr. Co., Mount Vernon, Ill., LB, **$466,366,** natural gas pipe line in Wayne Co. to connect with trunk line of Trunkline Gas Co. and natral distr. sys., FAIRFIELD, ILL. City, City Hall, Fairfield, Ill. Bids July 29. (Correction—location of project.) CD 8/5, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

Hoelzl Constr. Co., 13515 Brookpart Rd., Cleveland, O., CA, **$394,000** general contract, 1 story, brick, school, Highland Dr. and Oakes Rd., BRECKSVILLE, O. Bd. Educ., 8915 Highland Dr., Brecksville, O. Awarded Aug. 6. CD 11/12/51.

▲† **Peter Kiewit Sons' Co.,** 1024 N. 61 St., Omaha, Neb., CA Total cost **$1,200,000,000.** GASEOUS DIFFUSION PROCESS URANIUM PLANT, on 6,500 acre tract on Scioto River, Pike County between PIKETON and WAKEFIELD, O., for the Atomic Energy Commission, 1901 Constitution Ave., Wash., 25, D. C. Union Carbide & Carbon Corp., 30 East 42nd St., New York, N. Y., Giffels & Vallet, Inc., 1000 Marquette Bldg., Detroit, Mich., Sargent & Lundy, 140 S. Dearborn St., Chicago, Ill., Singmaster & Breyer, 42 Lexington Ave., New York, N. Y., Smith-Hinchman & Grylls, Inc., 800 Marquette Bldg., Detroit, Mich., Burns & McDonnell Engineering Co., 95th and Troost Sts., Kansas City, Mo., Holabird & Root & Burgee, 180 N. Wabash Ave., Chicago, Ill., engineers-architects.

J. P. Cullen & Sons, Janesville, Wis., LB, **$595,832** general contract DIAGNOSTIC CENTER, on University of Wisconsin campus, MADISON, WIS. Dpt. P. Welfare, Madison, Wis. Bids Aug. 8. CD 7/30.

Thos. H. Bentley & Son, 3131 W. Mill Rd., Milwaukee 9, Wis., CA, **$314,628,** general contract S. 32 St. SCHOOL, MILWAUKEE, WIS. Bd. School Directors, 1111 N. 10 St. Milwaukee 3, Wis. Bids Aug. 4, awarded Aug. 5. CD 7/22.

Automatic Storage Corp., 1914 Fisher Bldg., Detroit, Mich. CA **$600,000.** Contr. PA-1, automatic parking GARAGE for 100 cars units Macomb and St. Antoine Sts. DETROIT, MICH. City, Foster winter, MPA, Guardian Bldg., Detroit, Mich. Bids July 22. CD 6/5.

Saul Katz, 1317 Lafayette Bldg., Derroit, Mich. Owner Builds. **$435,000.** Eighty-seven 4 story, brick, concrete family APARTMENTS units, Seward St., DETROIT, MICH.

WEST OF MISSISSIPPI

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS
BRIDGES
August 28, Kansas August 29, Minnesota
September 9, South Dakota
STREETS AND ROADS
August 26, Iowa, Nebraska August 28, 29, Kansas
August 29, Minnesota September 9, South Dakota

Tex., Houston—B.A. 8/29—City, City Hall, 900 Brazos St., sanitary sewer line for area west of White Oak and north of Buffalo Bayou, $270,000. W. E. White, city engr. CD 8/2/51.

Nebraska—TRANSFORMER, etc.—B.A. 9/9—Loup River Public Power Dist., Columbus, transformer, switching and bus structures, transformer bus structure, control bldg., Platte Co. $100,000. P. E. Hampton, owner's engr. CD 9/1/49.

† **Okla., Altus**—GAS SYSTEM—B.A. 9/18—U. S. Eng., Box 61, Tulsa, Zone 2, gas system at Altus Air Force Base, ENG 34-066-53-11. $150,000. CD 1/24.

▲ **Texas and Louisiana**—GAS MAIN LINE—Bids Asked—Texas Eastern Transmission Corp., Texas Eastern Bldg., Shreveport, Pa., 315 mi. 24 in. gas main from Provident City, Tex. to Castor, La., $25,943,079. CD 5/7.

Tex., Freeport—WHARF—Bids Asked—Dow Chemical Co., Freeport, wharf constr. $100,000. CD 12/12/51.

Neb., Omaha—OFFICE—B.A. 8/26—Northern Natural Gas Co., 2223 Dodge St., main office west wing addn. $450,000. Frank Latenser & Sons, 1307 Farnam St., archts.

S. D., Sioux Falls—PLANT—B.A. 8/26—Sioux Falls Argus-Leader, 210 W. 9 St., newspaper plant, Minnesota Ave. and 10 St. $750,000. Hugill, Blatherwick & Fritzel, 367 Boyce Greeley Bldg., Sioux Falls, archts. Larson & McLaren, 1901 Foshay Tower, Minneapolis, Minn., assoc. archts. Bid date changed. CD 8/6.

Ia., Mason City—SCHOOL—B.A. 8/27—Bd. Educ., Herbert Hoover School, $600,000. Hansen & Waggoner, Mason City, archts. CD 12/6/51.

Minn., Minneapolis—OFFICE—B.A. 8/28—The Ministers Life & Casualty Union, 100 W. Franklin Ave., 3 story, 50x180 ft., 2 story, 50x100 ft. wing, office, Excelsior Blvd. near Lake Calhoun $620,000. Lang & Raugland, 802 Wesley Temple Bldg., archts. CD 7/9/51.

Tex., Laredo—SCHOOL—B.A. 8/29—Laredo Independent School Dist., Laredo, masonry Junior High School, $625,000. Plans deposit $40. Caudill, Rowlett, Scott & Assoc., 425 S. Main St., Bryan, engrs. and archts. CD 6/23.

▲ **Mo., St. Louis**—HOSPITAL—B.A. 9/2—St. Louis Children's Hospital, Roy D. Kercheval, pres., 500 S. Kingshighway, Zone 10, 6 story, brick, concrete, steel, stone hospital addn., alterations, 1 story, bsmnt., section 23x125 ft., present 1, 2 and 3 bldgs. rebuild and connect to addn. $2,750,000. Russell, Mullgardt, Schwarz & Van Hoefen, 1620 Chemical Bldg., 721 Olive St., Zone 1, archts. Brussel & Viterbo, 812 Olive St., Zone 1, struct. engrs. John D. Falvey, 316 N. 8 St., Zone 1, mech. engr. CD 6/6/49.

Tex., Galveston—WAREHOUSE—Bids Asked—Galveston Wharves, c/o E. H. Thornton, 2324 Strand St., cotton warehouse pier. $750,000. CD 2/16/50.

SOON LETS CONTRACT—BUILDINGS

▲ **Kan., Great Bend**—POWER PLANT—Western Light & Telephone Co., Great Bend, soon lets contract power plant, $3,000,000, Sargent & Lundy, 140 S. Dearborn St., Chicago 3, Ill., engrs. CD 6/26.

Kan., Wichita—NEWSPAPER—Beacon Publishing Co., Beacon Bldg., soon lets contract newspaper bldg. $500,000, W. I. Fisher, 301 S. Main St., archt. CD 5/28.

Minn., Golden Valley—HOSPITAL—Glenwood Hills Hospital, R. T. Rascop, admin., Golden Valley, soon lets contract 4 story hospital, $495,642. Magney, Tusler & Setter, 202 Foshay Tower, Minneapolis, archts. CD 7/25/51.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

Clinton Eng. Co., Clinton, Ia., CA, $255,565, 3 sewer pumping stations, CLINTON, IA. City Clinton, Ill. CD 5/8/51.

▲† **General Electric Co.,** River Rd., Schenectady, N. Y. CA. $3,230,136. generators, Gavins Point Reservoir, near Yankton, Inv. 25-066-52-131, SOUTH DAKOTA. U. S. Eng., 1709 Jackson St., Omaha, Neb. CD 7/15, under LB.

† **Cunningham-Kiewit Co.,** 4229 Lafayette St., Omaha, Neb. LB $514,817. constr., repair dikes and revetment, Narrows-Copeland Bend, along Missouri River, Inv. 25-066-53-19, IOWA and NEBRASKA. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids Aug. 5. CD 6/9/44.

† **Massman Constr. Co.,** 20 W. 9 St., Kansas City, Mo. CA. $612,313. repair dikes and revetment along Missouri River about 2 mi. from Peru, Neb., Nemaha Co., Neb. and Atchison Co., Mo., Inv. 25-066-53-16, NEBRASKA and MISSOURI. U. S. Eng., 1709 Jackson St., Omaha, Neb. CD 7/31, under LB.

† **Pine Bluff Sand & Gravel Co.,** foot of Nebraska St., Pine Bluff, Ark. CA $359,244. repair dikes and revetment along Missouri River, 6 mi. south of Craig, Mo., in Holt Co., Mo., and Richardson Co., Neb., Inv. 25-066-53,18, NEBRASKA and MISSOURI. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids Aug. 1. CD 7/29.

Center Constr. Co., Flasher, N. D., CA. $494,063. rural distr. lines, Knox, Holt and Garfield Counties, Proj. Neb. 80D Boyd (Sect. II), NEBRASKA. Niobrara Valley Electric Membership Corp., O'Neill, Neb. Bids Aug. 6. CD 7/16.

H. J. Taylor, Salina, Kan. CA. $116,594. sanitary sewer exten., southeast area;

McCollum Constr. Co., Garden City, Kan. CA. $199,220. sanitary sewer exten., southwest area, SALINA, KAN. City, Salina, Kan. Bids July 28. CD 7/14.

Western Contg. Co., 400 Benson Bldg., Sioux City, Ia. CA. $464,403. constr. ramp and taxiway at Plant 13, WICHITA, KAN. Boeing Airplane Co., Personnel Bldg., Wichita, Kan. Bids Aug. 1. CD 7/24.

† **Ramey Constr. Co.,** 229 Paramount Bldg., Amarillo, Tex. CA. $115,389. guard house Amarillo Air Force Base, Eng. 34-068-53-3, AMARILLO, TEX. U. S. Eng., Box 61, Tulsa 2, Okla. Bids July 24, awarded Aug. 5. CD 8/15/51.

▲ **Rex D. Kitchens Constr. Co.,** P.O. Box 3006, Austin, Tex. LB. Base Bid No. 1 $2,119,333. Base Bid No. 2 $2,085,944. Base Bid No. 3 $2,128,807. Base Bid No. 4 $1,992,311, North Austin Water Works consisting admin. bldg., pump house, chemical bldg., 25 m.g.d. filter plant, pump station, AUSTIN, TEX. City, c/o Walter Seaholm, city mgr., Austin, Tex. Bids Aug. 7. CD 7/8.

City, Dpt. P. Wks., C. M. Thelin, dir., Fort Worth, Tex. Owner Builds. $100,000. addnl. unit of fire dpt. electric sys. underground, FORT WORTH, TEX. CD 9/17/51.

Elder Constr. Co., Holmes Rd., Houston, Tex. LB $278,844, est. $115,000. North Side Sanitary Sewers Sect. 7, 42 and 75 in. pipe from Lee and Chapman Sts. to Wrightwood Pump Station, HOUSTON, TEX. City, City Hall, 900 Brazos St., Houston, Tex. Bids Aug. 6. CD 7/30.

Gulf Bitulithic Co., 2502 Galveston Rd., Houston, Tex. CA. $527,572. Bennington St. storm sewers, HOUSTON, TEX. City, City Hall, 900 Brazos St., Houston, Tex. Bids Aug. 6. awarded Aug. 11. CD 8/14, under LB.

Russ Mitchell, Inc., Box 8068, Houston, Tex. CA $687,668, est. $720,000. storm sewers Foster Place-Belmont, HOUSTON, TEX. City, City Hall, 900 Brazos St., Houston, Tex. Bids July 30, awarded Aug. 8. CD 8/7, under LB.

† **Guy H. James Constr. Co.,** First National Bldg., Oklahoma City, Okla. and **Wunderlich Contg. Co.,** 206 Patterson Bldg., Omaha, Neb. LB $12,838,692. constr. Tiber Dam and dike, Lower Marias Unit, Marias Division, Missouri River Basin Proj., 13 mi. south of Tiber, Spec. 3128, MONTANA. Bureau Reclamation, Dpt. Interior, Civic Center Bldg., Great Falls, Mont. Bids Aug. 12. CD 7/14.

Wyoming—State Hy. Comn., Cheyenne,

Lichty Constr. Co., P.O. Box 1068, Riverton, Wyo., CA, $148,204, est. $160,154. crushed grav. base course misc. work 8.174 mi. Ethete Road, Fremont Co.;

Read Constr. Co., Box 457, Cheyenne, CA. $192,837, est. $196,227, grading, draining, misc. work, 10.714 mi. Medicine Bow-North Road, S-50 (7), Carbon Co.;

Platte Valley Constr. Co., P.O. Box 595, Grand Island, Neb. CA. $303,129, est. $332,047, grading, draining, 5 rein.-con. culverts, base course surf. 11.477 mi. Green River-Linwood Road, S-264 (8), Sweetwater Co.;

Black Hills Constructors, Inc., 1817 Carry Ave., Cheyenne, Wyo., CA. $88,450, est. $87,748, base course surf., oil tr. by road mix method and misc. work 8.978 mi. Eight Mile Road, beginning 6 mi. west of Riverton thence northerly, SC-CFM 3021 Unit II, Fremont Co.;

Big Horn Constr. Co., Box 875, Sheridan, Wyo., CA. $61,568, est. $51,080, oil treatment by road mix method, misc. work, 3.52 mi. Fairview Smoot Road, SC-CFM 3124, Lincoln Co. Grand total $794,188. Bids Aug. 7, awarded Aug. 8.

† **Campbell & Kay,** Box 312, Alamogordo, N.M., CA. $615,227. emergency training facilities, Sandia Base, Eng. 29-005-52-38, ALBUQUERQUE, N. M. U. S. Eng., Box 1538, Albuquerque, N. M. CD 7/8, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

Swedberg Constr. Co., Detroit Lakes, Minn. LB. $511,751. general contract 1 story, 222x320 ft., U-shape SCHOOL, WARREN, MINN. Bid. Educ., S. C. Olson, clk., Warren, Minn. Bids July 24. CD 6/24.

Ringland-Johnson, Inc., 820½ Locust St., Des Moines, Ia., CA. $377,573, general contract, 2 story, bsmnt., Jefferson SCHOOL, CLINTON, IA. Independent School Dist. of Clinton, Bd. Educ., Clinton, Ia. Bids July 28. CD 8/5, under LB.

▲ **Kucharo & Assocs.,** 225 Jewett Bldg., Des Moines, Ia., LB. $1,793,950, HOSPITAL addn., DAVENPORT, IA. Mercy Hospital, 1326 Lombard St., Des Moines, Ia. Bids July 22. CD 6/20.

Larsen Bros., 10 N. Main St., Council Bluffs, Ia., CA. $508,088, SCHOOL, Glenwood State Hospital, GLENWOOD, IA. State Bd. Control, Des Moines, Ia. Bids July 24. CD 8/8, under LB.

Jones Bros. Constr. Co., Joplin, Mo. CA. Est. $300,000 to $400,000. remodel BUILDING, JOPLIN, MO. First National & Joplin National Banks, W. F. Reynolds, pres., 524 Main St., Joplin, Mo. Bank Building & Equipment Corp. of America, 906 Sidney St., St. Louis, Mo., archts.

Chapman & Bramer, 338½ South St., Springfield, Mo. CA. $345,000. 3 story, brick, concrete EDUCATIONAL BLDG., back of church, Robberson St. SPRINGFIELD, MO. South Street Christian Church, Rev. George L. Meyers, pastor, 500 South St., Springfield, Mo. CD 5/16, under LB.

Parson Constr. Co., 512 Grain Exchange Bldg., Omaha, Neb. CA. $441,083. general contract Jefferson SCHOOL, OMAHA, NEB. Bd. Educ., 3902 Davenport St., Omaha, Neb. Bids Aug. 4. CD 7/24.

Boese-Hilburn Electric Co., 100 W. 9 St., Kansas City, Mo. LB. $407,437. power wiring, POWER PLANT imprvs., Constr. K-25, KANSAS CITY, KAN. Bd. P. Utilities, City Hall, Kansas City, Kan. Bids July 23. CD 7/17.

Louis Burns & Harvey Shanks, Brady, Tex. Purchases, Day labor Sub-contracts. $375,000. Job No. 3, 52 DWELLINGS, BRADY, TEX. CD 5/23.

E. Eisenhauer, 1209 S. Tancahua St., Corpus Christi, Tex. LB. $525,000. converting old city hall into LIBRARY, CORPUS CHRISTI, TEX. City, City Hall, Corpus Christi, Tex. Morris Levy, Kaffie Bldg., Corpus Christi, Tex., archt. W. E. Simpson Co., 945 Milam Bldg., San Antonio, Tex., engr. Bids Aug. 5. CD 7/6/51.

Geo. F. Mixon Jr. & Assoc., 3450 Rankin St., Dallas, Tex. Owner Builds. $350,000. 45 DWELLINGS, DALLAS, TEX. CD 5/29.

Convair Aircraft, Camp Bowie St., Fort Worth, Tex. Owner Builds. $750,000. assembly line extension, FORT WORTH, TEX. Work under way. CD 2/27.

King & Sheets Corp., City National Bank Bldg., Houston, Tex. Owner Builds. $315,000. 45 DWELLINGS, FORT WORTH, TEX. CD 11/9/51.

J. P. Boone, 4320 Alief Rd., Houston, TEX. Owner Builds. $375,000. Job. No. 3, 8 masonry DWELLINGS, HOUSTON, TEX. CD 7/11.

Babbitt Building & Realty Co., 4201 Airline St., Houston, Tex. Owner Builds. $350,000. addnl. HOUSING, HOUSTON, TEX. CD 8/4.

B. F. Sturman, 204 Winkler Dr., Houston, Tex. Owner Builds. $375,000. five story masonry DWELLINGS, HOUSTON, TEX. CD 7/18.

P. C. Stewart, 5306 Carrolton St., Houston, Tex. Purchase and Hire, sub-contract $350,000. 38 DWELLINGS, HOUSTON, TEX. CD 4/15.

O'Donnell Bros. Constr. Co., 11309 W. Hardy St., Houston, Tex. CA $349,000. Proj. 2 Templebrook addn. Job. No. 2, 48 DWELLINGS, HOUSTON, TEX. O'Donnell Brothers, 11309 W. Hardy St., Houston, Tex. CD 4/4.

Brace & Carruth, 706 Garden Oaks, Houston, Tex. Own Forces. $350,000, 45 DWELLINGS, $425,000. 44 DWELLINGS, HOUSTON, TEX. CD 4/13/50.

Rob & Buck King, 4112 Fannin St., Houston, Tex. Owner Builds. $450,000. Proj. 1, 50 DWELLINGS, HOUSTON, TEX. CD 7/3.

† **Five Star Homes,** 731 E. Friar Tuck St., Houston, Tex. Owner Builds. $448,000, 36 DWELLINGS. $332,000, 32 DWELLINGS, HOUSTON, TEX. CD 7/8.

Paul Canto, 312 Hyde Park St., Houston, Tex. Owner Builds. $425,000. 32 DWELLINGS, near HOUSTON, TEX. CD 7/11.

Teliepsen Constr. Co., 1710 Telephone Rd., Houston, Tex. CA $400,000. parking and service GARAGE, HOUSTON, TEX. Rob. W. Clemens, 4110 Dennis St., Houston, Tex. U. S. Post Office Dpt., lessee. CD 8/11.

H. E. & S. Constr. Co., Longview, Tex. Owner Builds. $535,000. 10 brick APARTMENT units, LONGVIEW, TEX. CD 6/8.

Ray Hubbard & Assoc., 1507 Delano St., Dallas, Tex. Owner Builds. $330,000. Proj. No. 5, 45 DWELLINGS, LONGVIEW, TEX. CD 5/14.

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▲ **Fluor Corporation Ltd.**, M & M Bldg., Houston, Tex. CA $1,430,500, gas production concentration unit, modification existing poly unit; CA $479,125, food preparation unit; CA $698,200, thermoflore catalytic cracking unit, MOUNT PLEASANT, TEX. American Liberty Oil Co., Mount Pleasant, Tex. Grand total $2,607,825. CD 8/12.

Brazosport Development Co., c/o Perry Lumber Co., Pasadena, Tex. Owner Builds. $368,000. 46 DWELLINGS, PASADENA, TEX. CD 5/20.

L. C. Kirby Development Co., c/o Jno. Wilmeth, Kirby Bldg., Houston, Tex. Purchases, Day Labor, Sub-contracts. $385,000. Job. No. 2, 40 DWELLINGS, PASADENA, TEX. CD 7/28.

▲ **Gibbs & Hill, Inc.**, 450 7 Ave., New York, N. Y. CA $7,000,000. design and construct 60,000 to 90,000 kv. electric POWER PLANT, off Salado Creek and Nacogdoches Rd.;

Westinghouse Co., c/o Southland Life Bldg., Dallas, Tex. CA $62,000, high voltage electrical power plant switches;

Grinnell Co., 1315 Marilla Rd., Dallas, Tex. $172,000. fabrication, partial erection of piping for power plant;

Purchase & Hire, Sub-contracts, $387,500, constr. BULK ELECTRIC POWER SUB-STATION in Harlandale Sect.; $418,000. ELECTRIC BULK SUB-STATION, on North Side, SAN ANTONIO, TEX. City, Public Service Bd., 201 N. St. Marys St., San Antonio, Tex. Grand total $8,039,500. CD 11/5/51.

F. L. Scott & Son, 2402 W. Kings Hy., San Antonio, Tex. LB $383,451. Elementary SCHOOL, Lackland Field, SAN ANTONIO, TEX. Community Facilities of Housing & Home Finance Agency, 1016 T & P Bldg., Fort Worth, Tex. Bids Aug. 5. CD 7/15.

Columbia Development Co., c/o V. L. Evans, 1603 S. Post Oak Lane, Houston, Tex. Owner Builds. $425,000. Unit No. 2, 60 DWELLINGS, WEST COLUMBIA, TEX. CD 6/30.

Cowan Constr. Co., 2608 9 Ave. N., Great Falls, Mont. LB. $501,000. elementary school, GREAT FALLS, MONT. School Dist. 1, Great Falls, Mont. A. V. McIver & Assoc., Strain Bldg., Great Falls, Mont., archts. Bids July 31. CD 9/23/49.

† **Olson Constr. Co.**, Box 186, Denver, Colo., CA $794,148, ADMINISTRATION BLDG. 11, PLANT PROJECTION BLDG. 21; MEDICAL BLDG. 22, Rocky Flats Proj., Inv. No. 292-52-15, BOULDER, COLO. Bids Jan. 18. CD 1/29, under LB.

† **C. H. Leavell & Co.**, 1900 Wyoming St., El Paso, Tex. LB $757,380. est. $750,000. LABORATORY exten., White Sands Proving Ground, 50-51 MCA-Adv. D. Dir. 1 Line A 478-17, Inv. No. 29-005-53-4, LAS CRUCES, N. M. U. S. Eng., Box 1538, Albuquerque, N. M. Bids Aug. 8. CD 7/14.

FAR WEST

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS
BRIDGES

August 26, Washington — September 3, 4, California
September 9, Washington
STREETS AND ROADS
August 26, Washington — September 3, 14, California

† **Idaho**—GENERATORS—B.A. 9/9—Bureau Reclamation Dpt. Interior, Bldg. 53, Denver Federal Center, Denver, Colo., generators for Palisades Power Plant, Palisades Proj., on South Fork of Snake River, approx. 7 mi. southwest of Irwin, Spec. DC 3772. L. N. McClellan, ch. engr. CD 9/12/44, under Earthwork, Waterways.

▲ **WASHINGTON**—B.A. 9/9—State Hy. Dpt., Olympia, King Co.—vehicular subway in Battery St. to connect Aurora Ave. with Alaskan Way Viaduct, $2,000,000. W. A. Bugge, state hy. dir. CD 6/12.

▲† **Oregon and Washington**—B.A. 10/7—U. S. Eng., Pittock Block, Portland, Ore., spillway for The Dalles Dam Columbia River, CIVENG 35-026-53-35. $15,000,000.

BIDS ASKED—BUILDINGS

Wash., Seattle—SCHOOL—B.A. 8/28—Highline School Dist. 401, 253 S. 152 St., frame River on Heights Elementary School, S. 148 St. near 24 Ave. S. $400,000. Mallis & De Hart, 631 Lion Bldg., Zone 4, Wash., archts. CD 6/28/51.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **IDAHO**—Bureau P. Rds., Dpt. Commerce, 609½ Bannock St., Boise,
rejected bids July 8, 6.9 mi. McCall-Stibnite Road Valley Co., LB $585,795. CD 7/15, under LB.

▲† **S. Morgan Smith Co.**, York, Pa., CA, $1,421,700 four 39,000 hp. hydraulic turbines for Palisades Power Plant, Spec. 3706, IDAHO. Bureau Reclamation, Dpt. Interior, Bldg. 53, Denver Federal Center, Denver, Colo. Bids June 10. CD 6/19, under LB.

Lembke Constr. Co., 1927 Fremont St., Las Vegas, Nev., LB, $224,488, 35,700 ft. 8 in. and 3600 ft. 15 in. tank addns., LAS VEGAS, NEV. City, City Hall, Las Vegas, Nev. Bids Aug. 4.

WASHINGTON—State Hy. Dpt., Olympia,
Goetz & Brennan, Seaboard Bldg., Seattle 1, Wash., CA, $782,875, c. conc., b. conc. paving 5.3 mi. Hy. 1, Toutle River to Foster, Cowlitz and Lewis Counties. Bids Aug. 5. CD 7/23.

▲ **Howard S. Wright & Co.**, 407 Yale Ave. N., Seattle, Wash., CA, $2,716,408, 280x785 ft., rein.-con., steel flight test hangar, SEATTLE, WASH. Boeing Airplane Co., 7755 E. Marginal Way, Seattle, Wash. Bids July 2. CD 7/11, under LB.

Northwest Constr. Co., 3950 6 Ave. N.W., Seattle, Wash., LB, $230,850, est. $242,835, extending Empire Way from Rainer Ave. to Dearborn St.;

T. Romano, 2032 King St., Seattle, Wash., LB, $69,746, est. $69,117, sidewalks on 12 Ave. N. E. and other streets, SEATTLE, WASH. City, County-City Bldg., Seattle 4, Wash. Bids Aug. 6.

† **Guy F. Atkinson Co.**, Box 1728, Portland, Ore., LB. $373,185, reconstr. moorage wall, McNary Lock and Dam, Civeng-45-165-53-1, Benton Co., OREGON. U. S. Eng., City and County Airport, Walla Walla, Wash. Bids Aug. 5. CD 7/2.

CALIFORNIA—State Div. Hys., 120 S. Spring St., Los Angeles,

Ukropina, Polich & Kral, 201 E. Las Tunas Dr., San Gabriel, Calif., LB, $958,841, grading, paving, etc. 2 mi. Santa Ana Freeway between Lakewood Blvd. and D Rd., Los Angeles Co. Bids Aug. 7. CD 7/14.

† **Schurr & Finlay, Inc.**, 4898 Main St., Yorba Linda, Calif., CA, $577,929, electrical distr. sys. (second increment) at El Toro Marine Air Station, NOY 72540, Spec. 33733, EL TORO, CALIF. Dpt. Navy, San Diego, Calif. Bids July 15, awarded Aug. 1. CD 7/22, under LB.

▲ **M. Miller & Co.**, 877 Bunkerhill Ave., Los Angeles, Calif., CA, $471,131, Schedule A.;

A. J. Peters & Son, 534 Stockton Ave., San Jose, CA $339,558, Schedule B;

Barrett & Hilp and De Luca & Son, 918 Harrison St., San Francisco, Calif. CA, $920,471, Schedule E, for municipal sewage disposal project, HAYWARD, CALIF. City, City Hall, Hayward, Calif. Bids July 7, awarded Aug. 8. CD 7/15, under LB.

Charles J. Rounds Co., 5162 Elmwood Dr., Los Angeles, Calif. CA. $412,136, channel excav., San Gabriel River, 7 St. to Pacific Coast hy., Long Beach, LOS ANGELES, CALIF. Los Angeles County Flood Control Dist., 751 S. Figueroa St., Los Angeles, Calif. Bids July 22, awarded July 29.

† **Vinnell Co., Inc.**, 1145 Westminster Ave., Alhambra, Calif. CA. $650,596, 2 story lean-to hangar at National Guard Base, ONTARIO, CALIF. U. S. Property & Disbursing Officer, 3440 Hope St., Los Angeles, Calif. Bids June 26.

† **R. R. Hensler**, 7550 Wheatland St., Sun Valley, Calif., CA, $959,000, runway extensions, etc. Ontario International Airport and National Guard Base, Inv. 52-46, ONTARIO, CALIF. Dpt. Army, Air Force & National Guard Bureau, 3440 Hope St., Los Angeles, Calif. Awarded Aug. 7.

▲† **MacDonald & Kruse**, 816 South Allen St., Glendale, Calif., CA, $1,195,000, Runway 3-21 at test center, Spec. 31553, POINT MUGU, CALIF. Naval Air Missile Test Center, Point Mugu, Calif. Bids June 19, awarded Aug. 6. CD 6/30, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

Busboom & Rauh, N. 601 Cedar St., Spokane, Wash., LB, $422,278, general contract 1 story, rein.-con. SCHOOL, GARFIELD, WASH. School District 302, Garfield, Wash. Bids Aug. 1. CD 7/15.

Lovell Constr. Co., E. 125 St. and 15 Ave. N. E., Seattle, Wash., Day Labor. $768,000, 64 HOUSES, 13 and 14 Aves. N. E. north of E. 170 St., SEATTLE, WASH.

John E. Branagh & Son, 105 Sheridan Ave., Piedmont, Calif., CA, $575,700, 3 story, 34,000 sq. ft., rein.-con. low temperature LABORATORY, Berkeley Campus, BERKELEY, CALIF. Bd. Regents, University of California, Berkeley, Calif. Bids June 12, awarded July 28. CD 6/18, under LB.

L. F. Larrmore, 8904 S. Manhattan Pl., Los Angeles, Calif., CA, $410,700, 52 frame, stucco DWELLINGS, Catalina Budlongs, Berendo and Vermont Aves., LOS ANGELES, CALIF. Wm Sieman, 6851 Ranchito Ave., Van Nuys, Calif.

▲ **S. E. Onorato, Inc.**, 220 Bush St., San Francisco, and **W & B Realty Co.**, Los Angeles, Calif., (Joint), LB. 33 yr. lease, 4% of gross receipts. (Min. of $1225 per month). 933 car garage to be constr. by Haas & Haynie, 275 Post St., San Francisco, Calif.;

St. Marys Square Garage Corp., Barrett & Hilp, 918 Harrison St., San Francisco, LB. as contractors. 50 year lease, 4.25% of gross receipts, Min. $1250 per month. 911 car garage;

Union Square Garage, Inc., 33 Post St., San Francisco, LB. 40 year lease 3½% gross receipts. Min. $1170 per month, 874 car GARAGE to be constructed by Clinton Constr. Co., 923 Folsom St., San Francisco, Calif. UNDERGROUND GARAGE, St. Marys Square, SAN FRANCISCO, CALIF. Recreation & Park Comn. City of San Francisco, 500 Golden Gate Ave., San Francisco, Calif. Bids Aug. 4. CD 7/9.

The H. K. Ferguson Co., 411 W. 5 St., Los Angeles, Calif., CA. Est. $800,000. design and construct, rigid steel frame, U-shaped structure with three 60 ft. spans 552 ft. long, MANUFACTURING bldg., WATSON, CALIF. Johns-Manville Corp., 816 W. 5 St., Los Angeles, Calif.

ALASKA

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **Morrison-Knudsen Co., Inc.**, 314 Broadway, Boise, Idaho, LB, $935,033, 42,000 ft. steel, asbestos cement or c.i. water mains to Eastchester and Airport Heights areas, Proj. Asa 50-A-120, 50-A-157, ANCHORAGE, ALASKA. Alaska P. Wks., Dpt. Interior, Juneau, Alaska. Bids Aug. 6. CD 7/15.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Aleutian Homes, Inc.**, Kodiak, Alaska. Day Labor. Est. $3,000,000. 344 HOUSES, KODIAK, ALASKA.

CANADA

BIDS ASKED—HEAVY CONSTRUCTION

Ont., Ottawa—HANGAR—B.A. 9/3—R. P. Opie, engr. Defence Constr. Ltd., 441 Queen's Quay W., Toronto, 2B, Ont., cantilever hangar at R. C. A. F. Station, Uplands Airport, Job 2078, Approx. $700,000. Plans deposit $100.

Manitoba—POWER PLANT—B.A. 9/8—Manitoba Hydro-Electric Board, Phoenix Bldg., Winnipeg, main power plant at new McArthur Falls power site on Winnipeg River. H. G. Acres & Co., 2135 Culp St., Niagara Falls, Ont., engrs. CD 12/9/46.

▲ **Alta., Namao**—HANGAR, etc.—B.A. 9/16—Defence Constr. Ltd., Kensington Bldg., Winnipeg, Man., standard cantilever maintenance hangar and workshops for R. C. A. F. $1,000,000. Plans deposit $100. K. F. Hurst, c/o owner, regional engr.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **ALBERTA**—Province of Alberta, Parliament Bldgs., Edmonton,

Standard Gravel & Surfacing of Canada Ltd., 5340 1 St. S. W., Calgary, Alta., CA, $1,061,803, stabilized grav. base course, asph. hot plant mix surf. course, from Strathomore to Gleichen Corner on Hy. 1, Trans-Canada Hy.;

C. Mamczasz, Prince Albert, Sask., CA, $236,937, asph. bound consolidated grav. base course 28.1 mi., Sealcoating 20.2 mi. Hy., Banff-Jasper, Awarded July 15;

Williams & Carrothers Ltd., 226 E. Hastings St., Vancouver, B. C., CA, $230,606, grading 4 mi. Trans-Canada Hy., place stabilized grav. base, c. conc. curbs, gutters, catchbasins, drains, east of Banff National Park, Awarded Aug. 1. CD 12/1/43.

▲ **Mannix Ltd.**, 332 7 Ave. N., Calgary, Alta., CA, $4,000,000, three initial oil pumping stations at Edmonton, Marlboro, Alta. and Kamloops, B. C., ALBERTA and BRITISH COLUMBIA. Transmountain Oil Pipeline Co., c/o S. D. Bechtel & Assocs., 3780 Wilshire Blvd., Los Angeles, Calif., U.S.A. Canadian Bechtel Co., Ltd., 44 King St. W. Toronto, Ont., engrs. CD 12/27/51, under CA.

MANITOBA—Dpt. P. Wks., Legislative Bldg., Winnipeg, **Carter Constr. Co., Ltd.**, 539 Kylemore Ave., Winnipeg, Man., CA, $729,211, grading 14.9 mi. Trans-Canada Highway, near Sandilands. Awarded Aug. 5.

Kenney Constr. Co., Ltd., P. O. Box 389, Yarmouth, N. S., CA, Approx. $550,000, 160 ft. span structural steel hangar at R. C. A. F. Station, GREENWOOD, N. S. Defence Constr. Ltd., 1032 Gottingen St., Halifax, N. S. C. J. Connolly, c/o owner, engr. Bids June 17. CD 6/2.

E. Frenette Ltd., 75 St. Laurent St., Quebec City, Que., CA, $530,576, 125x1,000 ft. concrete sheds reconstruction, at Harbor, QUEBEC CITY, QUE. Gov. of Canada, National Harbours Bd., West Block, Ottawa, Ont.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Commonwealth Constr. Co. Ltd.**, Royal Bank Bldg., Winnipeg, Man., CA, Approx. $5,500,000, 8 story, 671 bed L-shaped, brick, steel, concrete HOSPITAL WING, ST. BONIFACE, MAN. St. Boniface Hospital Expansion & Building Fund, St. Boniface, Man. Bids Aug. 6, awarded Aug. 8. CD 7/17.

Town & County Constr. Ltd., 65 Main St. N., Brampton, Ont., Owner Builds, $570,000. housing development, incl. 57 homes, in McCaul St. Subdivision, BRAMPTON, ONT.

▲ **L. Donolo, Inc.**, 8320 Blvd. St. Lawrence, Montreal, Que., CA, Approx. $1,500,000, 12 story 102x171 ft., rein.-con., brick, stone light MANUFACTURING BLDG., MONTREAL, QUE. Gordon Brown, Inc., 460 W. St. Catherine St., Montreal, Que. Bids July 14. CD 7/1.

L. B. Magil Co., 5274 Queen Mary Rd., Montreal, Que., Own Forces, $900,000, 84 concrete, brick DWELLINGS, Church St., ST. LAURENT (POSTAL DIST. MONTREAL), QUE.

FOREIGN

BIDS ASKED—HEAVY CONSTRUCTION

New Zealand, Auckland—B.A. 11/5—Board's Offices, P. O. Box 298, Auckland, main sewer 6 ft. 9 in. horseshoe section in tunnel, 17,000 ft. long; main sewer, partly 5 ft. 6 in. x 3 ft. in tunnel, about 15,000 ft. long, 3,000 ft. access roadway, incl. 1,100 ft. tunnel section.

BIDS ASKED—BUILDINGS

Iraq, Baghdad—OIL REFINERY—B.A. 11/3—Director General Government Oil Refineries Administration, Baghdad, constr. foundations, concrete structures, other civil engineering works for Government Oil Refinery, near here.

(Proposal Advertisements see pp. 84 to 87)

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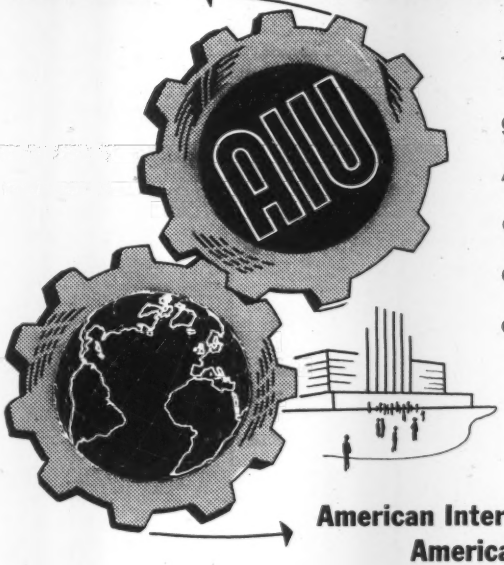

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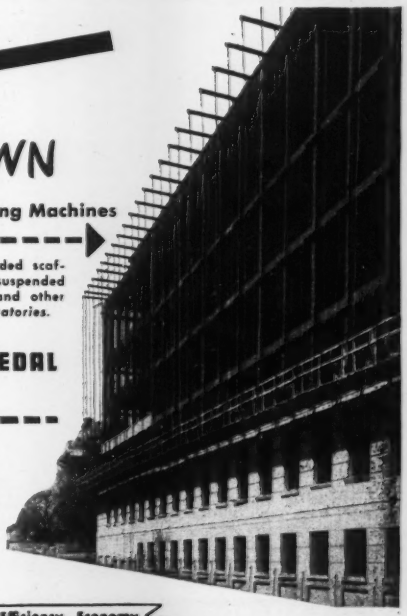

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Bids—Low Bids—Contracts—Second Section

NEW ENGLAND

BIDS ASKED—HEAVY CONSTRUCTION

Mass., Methuen—B.A. 8/25—Town, Bd. Selectmen, Town Hall, sewer constr., Bradley Brook main sewer, $60,000. Plans deposit $10 refundable, Haley & Ward, 73 Tremont St., Boston, engrs.

Mass., Natick—B.A. 8/25—Town, Bd. P. Wks., Middlesex Ave., Contr. 5 Pumping station Travis Rd. Pelham No. 1 Sect. Plans deposit $10 refundable. Haley & Ward, 73 Tremont St., Boston, engrs. Bid 6/11 rejected. CD 8/14/51.

† **Vermont**—B.A. On Or About 9/3—U. S. Eng., 857 Commonwealth Ave., Boston 15, Mass., constr. 9x11 ft. box culvert, Union Village Dam, Ompompanoosuc River, CIVENG L9-016-53-2.

▲† **Me., Harpswell Neck**—GAS AND FUEL STORAGE FACILITIES—B.A. 9/9—Dist. P. Wks. Office, First Naval Dist., 495 Summer St., Boston, Mass., aviation gas and jet fuel storage facilities, incl. steel, concrete fuel pier, rock filled causeway, six 50,000 bbl., and 80,000 bbl. steel, floating roof, fuel storage tanks with necessary tank farm piping, equipment, approx. 10 mi. fuel oil transmission pipe line, admin., operation and storage bldgs., roads, utilities, site imprvs. to provide complete fuel receiving, storage and dispensing facilities at U. S. Naval Aviation Fuel Facility, NOY 70849, Spec. 31260. Plans deposit $180. CD 10/30/51, under Me., Portland.

SOON LETS CONTRACT—BUILDINGS

Mass., Roxbury—BUILDING—New England Co., 80 Langdon St., soon lets contract present bldg. alterations, boiler room, addn., $85,000. Phineas Zolot, 501 Fifth Ave., New York, N. Y., archt.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **Consolidated Constructors, Inc.**, 807 Congress St., Portland, Me., LB **$522,600**, est. $500,000. A.I.O. compound, addnl. motor pool facilities, dental clinic, Limestone Air Force Base, ENG 19-016-52-82, LIMESTONE, ME. U. S. Eng., 857 Commonwealth Ave., Boston, Mass. Bids Aug. 5. CD 7/28.

▲† **B. Perini & Sons, Inc.**, 73 Montwait Ave., Framingham, Mass. CA **$3,113,501**, est. $1,000,000. family housing, Presque Isle and Limestone Air Force Bases, Eng. 19-016-52-81, PRESQUE ISLE AND LIMESTONE, ME. U. S. Eng., 857 Commonwealth Ave., Boston, Mass. CD 7/28, under LB.

† **U. S. Eng.**, 857 Commonwealth Ave., Boston, Mass. rejected bids. repaving 2 sections of road, IFB 17-602-52-36, PRESQUE ISLE, ME. LB **$105,450**. CD 7/22, under LB.

MASSACHUSETTS—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,

Roy M. Wright, 116 Denver St., Springfield, Mass. CA **$138,852**, est. $135,000. hy. constr. Wright Ave., Northampton.

Central Constr. Co., 228 Southampton St., Roxbury, Mass. CA **$73,144**, est. $75,000. Hy. work Cambridge St., Boston. Bids Aug. 5. CD 7/21.

Johnson Bros. Co., 542 Southbridge St., Auburn, Mass. LB **$61,363**, est. $60,000. Constr., lay water mains, BOYLSTON, MASS. Town, Bd. Water Comrs., Boylston, Mass. Bids Aug. 1. CD 7/28.

C. W. Lauman & Co., Hicksville Rd., Bethpage, L. I., N. Y. LB **$48,750**, est. $50,000. Water plant, equip., incl. housing and appurtenances, TISBURY, MASS. Town, Bd. Waters Comrs., Town Hall, Tisbury, Mass. CD 7/29.

CONNECTICUT—State Hy. Dpt., State Office Bldg., Hartford,

The Mariani Constr. Co., Inc., 222 Forbes Ave., New Haven, Conn., LB, **$79,410**, overpass superstructure with pre-stressed concrete, Hubbard St. Overpass on E. Hartford-Glastonbury Expressway, S-53 (2) Glastonbury; LB **$77,405**, composite welded girder bridge over Rte. U. S. 6, F I-41 (11), Southbury;

The Burnalli Constr. Co., Inc., 19 Main St., Southington, Conn., LB, **$600,161**, 3 bridges, grading, draining Eastbound Roadway Wilbur Cross Parkway, FI-130 (23) Tolland and Willington. Bids Aug. 4. CD 7/21.

Joseph F. Barrett & Sons, 205 Beardsley Ave., Stratford, Conn., CA, **$82,904**, Contract 18, sewerage works, Hilltop Section, STRATFORD, CONN. Town, Town Hall, Stratford, Conn. Bids July 23.

BUILDINGS

LOW BIDS AND CONTRACTS

A. Cefalo & Sons, Inc., 42 Bennett St., Lynn, Mass. LB **$729,000**, est. $750,000. COURT HOUSE, CAMBRIDGE, MASS. Comrs. Middlesex Co., Dist.. Court House, East Cambridge, Mass. Bids Aug. 4. CD 7/28.

Columbia Constr. Co., 10 Tremont St., Boston, Mass. CA **$653,029**. HOSPITAL alterations, repairs, Hospital Rd., MALDEN, MASS. Malden Hospital, Hospital Rd., Malden, Mass. CD 7/29, under LB.

MIDDLE ATLANTIC

BIDS ASKED—HEAVY CONSTRUCTION

† **Md., Baltimore**—B.A. 8/26—U. S. Eng., 24 St. and Maryland Ave., P.O. Box 1715, Zone 3, car parking areas, and sidewalks, Veterans Admin. Hospital, CIVENG 18-020-53-5. CD 8/4.

BIDS ASKED—BUILDINGS

▲ **Pa., Pitcairn**—SERVICE BLDG.—B.A. 8/25—Pennsylvania R. R., D. L. Sommerville, ch. engr., Penna. Station, Pittsburgh, 100x350 ft. diesel locomotive service bldg., $1,000,000, DeLeuw-Cather & Co., 150 N. Wacker Dr., Chicago 6, Ill., consult. engrs. CD 12/26/51.

Md., Rockville—SCHOOL—B.A. 8/26—Montgomery Co. Bd. Educ., brick, concrete, steel Connecticut Ave. Estates Elementary School. $750,000. Plans deposit $40, Johannes & Murray, 855 Pershing Dr., Silver Spring, archts.

† **Md., Edgewood**—TEST CHAMBER—B.A. on or about 9/9—U. S. Eng., 24 St. and Maryland Ave., P.O. Box 1715, Baltimore, Zone 3, low temperature test chamber Army Chemical Center, Eng. 18-020-53-6. CD 1/3/52, under LB.

† **Md., Camp Detrick**—BUILDINGS—B.A. on or about 9/16—U. S. Eng., First and Douglas Sts. N.W., Wash., D. C., 1 story, 40x80 ft. utility bldg. and corral area, Eng. 49-080-53-5-(5); 2 story, 40x90 ft. service and animal breeding bldgs., Eng. 49-080-53-6-(6); 1 story, 40x50 ft. crop development storage shed, Eng. 49-080-53-7-(7); 1 story, 52x61 ft. boiler house addn., Eng. 49-080-53-19-(17). CD 11/14/51.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **NEW YORK**—Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany, N. Y.

Horn Constr. Co., Inc., N. Hewlet Ave., Merrick, L. I., N. Y., CB, **$1,107,249**, 2 steel girder railroad bridges, elevation of .98 mi. of railroad track, new railroad station facilities, c.conc. .24 mi. affected existing streets, Massapequa, Nassau Co. Bids Aug. 7. CD 7/16.

▲ **NEW YORK**—Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany, N. Y.

Potter-De Witt Corp., Pavillion, N. Y., LB, **$2,056,051**, est. $2,209,000. 6.4 mi. New York State Thruway, Ont. Sect., Sub 4 & 5A (Montezuma-Port Bryon); (Port Byron-Conquest) S.H. 8087; Montezuma-Port Byron, S.H. 5610; Weedsport-Cato, SH 686; Greene St. Connection; Town Road and Marginal Rd., North of Port Byron, O.T.52-11P, R.C.52-78, S.T.52-17, Cayuga Co.,

Green Island Contr. Co., 594 Broadway, Watervliet, N. Y., LB, **$275,449**, est. $303,000. 3.85 mi. Mount Road, FAS.SH.52-10; Magee-Clyde, Pt. 1, FASS 52-12, FAS.SH.52-10; Seneda Co.;

Brunner Asphalt Constr., Inc., 237 Kensington Ave., Buffalo, N. Y., LB, **$582,219**, est. $613,000. 5.2 mi. Southwestern Boulevard, S.H.9269, R.C.52-50 Erie Co.;

Louis Argenio, Inc., Newburgh, N. Y., LB, **$142,955**, est. $166,000. 3.39 S.H. Marlboro-Cedar Hill Cemetery S.H.5176, Milton-Marlboro, S.H. 5124, R.C.52-87, Ulster Co.;

J. J. Haggerty, Inc., Rogers Ave., Westhampton Beach, L.I., N. Y., LB, **$187,000**, est. $190,000, 1.85 mi. Bridgehampton Devon, Pt. 1, S.H.1495, FARC 52-81, Suffolk Co.;

cancelled bids to have been opened Aug. 7, 8.38 mi. Copnhage-Lowville, Pts. 1 and 2, S.H. 1020-847, FARC 52-77, Lewis Co.; 0.65 mi. Cross Bronx Expressway, Contr. 9 S, FACBE 52-1 Bronx Co. CD 7/16.

▲ **PENNSYLVANIA**—State Hy. & Bridge Auth., and Dpt., Hys., North Office Bldg., State Capitol, Harrisburg,

G. A. and F. C. Wagman, Inc., Dallastown, Pa., LB $1,402,234, 2 concrete deck plate girder and I-beam bridges over Lehigh River and railroad divided hy. rein.-con., section Rte. 22 Allentown by-pass, Whitehall and Hanover Twps., Lehigh Co. Bids Aug. 8. CD 7/16.

▲ **PENNSYLVANIA**—State Hy. & Bridge Auth., 506 N. Office Bldg., Harrisburg.

Berlanti Constr. Co., Inc., 15 Oakland St., Harrison, N. Y., LB, **$2,151,413**, 19,114 ft. divided c. conc. hy., 1 concrete deck I-beam bridge, 2 rein.-con., 3 plate deck girder, and two rigid frame conc. bridges, Allentown-By-Pass Route 22, Palmer Twp., Wilson Boro, City of Easton, Northampton Co.;

Rogers Constr. Co., Bell Mountain, Scranton, R. D., Pa., LB, **$486,409**, 39,066 ft. crushed aggregate base with bit., T. R. 247; 371, Mt. Pleasant Twp., Wayne Co.;

E. M. Brown, 11 Gurlich Ave., Clearfield, Pa., LB, **$764,132**, wid'n., overlay 53454 ft., roadway, crushed aggregate base, surf. new base, existing pavement with Eulalia, Hebron and Two Lick Twps., Potter Co.;

H. R. Miller Co., Inc., Box 1235 Lancaster, Pa., LB, **$1,135,930**, 8,801 ft. divided c. conc. hy., wid'n., overlay existing pavement, I-beam bridge T. R. 611, Delaware Water Gap Boro, Smithfield Twp., Monroe Co.;

B. B. Constr. Co., Philipsburg, Pa., LB, **$248,390**, wid'n., 14,709 ft. existing pavement with crushed aggregate base, surf. new base, existing pavement with bit. L. R. 17015 (1), I-beam bridge Sandy Twp., Du Bois City Clearfield Co. CD 7/18;

Central Pa. Quarry, Stripping & Constr. Co., 270 S. Pine St., Hazleton, Pa., LB, **$1,026**, 934, 15,451 ft. crushed aggregate base, with bit., wid'n., T. R. U. S. 309, Fairview and Hanover Twps., Ashley Boro, Luzerne Co., Bids Aug. 8. CD 7/22.

▲ **MARYLAND**—State Rds. Comn. 108 E. Lexington St., Baltimore, Zone 2.

T. E. Winter, Inc., 462 W. York St., Norfolk, Va. LB **$1,595,794**. grading, drainage, surf. 4.63 mi. Westminster By-Pass, Contr. CL 303-2-715, Carroll Co.;

Cumberland Contg. Co., Cumberland, Md. LB **$185,808**. resurf. 5.129 mi. U. S. Rte. 220, Contr. A 444-615, Allegheny Co. Bids Aug. 5. CD 7/24.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Willcox Constr. Co., Inc. and James McHugh Constr. Co., Inc.**, 29-28 41 St., Long Island City, N. Y., LB, **$3,753,990**, general contract;

J. L. Murphy Inc., 340 E. 44 St., New York, N. Y., LB, **$433,399**, plumbing;

Simpson Electric Corp., 71 E. 116 St., New York, N. Y., LB, **$319,800**, electrical work for St. Nicholas Houses, Proj. No. NY 5-10, Sect. III, incl. Bldg. No. 8 to 13 inclusive in area bounded generally by W. 131 St., 7 Ave. W. 129 St. and 8 Ave., Manhattan Boro, NEW YORK, N. Y. New York City Housing Auth., 63 Park Row, New York 7, N. Y. Bids Aug. 5. CD 7/23.

John V. Schaefer Constr. Corp., 381 Sunrise Hy., Lynbrook, N. Y., CA, **$880,000**, general contract Oceanside Junior High SCHOOL, OCEANSIDE, N. Y. Bd. Educ., Union Free School Dist. 1, Oceanside, N. Y. bids July 23. CD 7/10.

John McShain, Inc., 3 W. Franklin St., Baltimore 1, Md. LB. 560x300x470 ft. Children's VILLAGE, Dulaney Valley Rd., TOWSON, MD. R. C. Archdiocese of Baltimore, Cathedral and Mulbery Sts., Baltimore 1, Md. Bids July 8. CD 6/26.

▲† **George Hyman Constr. Co.**, 1010 Vermont Ave. N. W., Wash., D. C., CA, **$2,737,000**, HOSPITAL WARD WING, AUDITORIUM, outside utilities at U. S. Soldiers Home, Serial No. CIVENG 49-080-52-42, WASH., D. C. U. S. Eng., First and Douglas Sts. N. W., Wash. 25, D. C. Bids July 29. CD 7/31, under LB.

SOUTH

BIDS ASKED—HEAVY CONSTRUCTION

† **S. C., Charleston**—SEWAGE TREATMENT PLANT—B.A. 8/26—U. S. Eng., 33 Custom House, sewage treatment plant, Charleston Air Force Base, Eng. 38-081-52-5. Plans deposit $25. CD 7/28.

† **Tenn., Memphis**—PUBLIC WORKS BLDG.—B.A. 8/28—Dpt. Navy, Officer in Charge of Constr., Box 365, Naval Base, S. C., public works bldg., Naval Air Station, NOY 74186. Extended date. CD 7/28.

La., Gretna—B.A. 9/8—City, b. conc. pavement Willow St. from its intersection with Fifth to its intersection with 11 St. Plans deposit $25. Hotard & Webb, 1030 Amelia Ave., Gretna, engrs.

BIDS ASKED—BUILDINGS

Va., Alexandria—HOTEL—B.A. 8/25—Thomas H. Meletis, 734 N. St. Asaph St., 7 story rein.-con., masonry Virginia Hotel, $750,000. W. D. Phillips, 129 S. Royal St., archt. Herbert Menuccia, 930 F St. N. W. Wash., D. C., engr.

Tenn., Sewanee—DORMITORY—B.A. 8/28—University of South, Sewanee, Shepard Hall Dormitory, Warren, Knight & Davis, Protective Life Bldg., Birmingham, Ala., archts. CD 4/18.

SOON LETS CONTRACT—BUILDINGS

La., Lake Charles—WAREHOUSE—Davidson Sash & Door Co., Lake Charles, soon lets contract warehouse addns., $85,000.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **Wise Contg. Co.**, Eight and Grace Sts., Richmond, Va., LB **$1,137,800**. fuel pier at Supply Center, NOY 73594, YORKTOWN, VA. Dist. P. Wks. Office, U. S. Naval Base, Norfolk 11, Va. CD 8/8, under LB.

▲† **Tidewater Constr. Co.**, 538 Front St., Norfolk, Va. CA. **$1,283,000**. aviation gas and jet fuel storage at Cheatham Annex, NOY 70223, YORKTOWN, VA. Dist. P. Wks. Office, U. S. Naval Base, Norfolk 11, Va. Bids Aug. 12. CD 7/22.

▲† **Christian & Bell**, 664 Spring St. N.W., Atlanta, Ga., LB, **$1,694,448**, communication maintenance bldg., Warner Robins Air Force Base, Inv. 52-71 MACON, GA. U. S. Eng., Post Office Bldg., Savannah, Ga. Bids Aug. 6. CD 7/30.

L. E. Farley, Inc., 2609 Sunset Blvd., Houston, Tex. CA est. **$500,000**. natural gas lines from Morgan City to Baton Rouge, LOUISIANA. Interstate Natural Gas Co., Monroe, La.

Geo. M. Eady Co., 340 Byrne St., Louisville 8, Ky. LB **$249,150**. est. $225,000. concrete bridge Lexington Rd., LOUISVILLE, KY. City, Sixth and Jefferson Sts., Louisville 2, Ky. Bids Aug. 5. CD 11/10/50.

† **G. E. Moore Co.**, P. O. Box 1069, Greenwood, S. C. CA, $678,649. P.O.L. sys. at Sewart Air Force Base, Inv. 52-2, SMYRNA, TENN. U. S. Eng., 303 Federal Bldg., Nashville 1, Tenn. CD 8/5, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Jeffress-Dyer, Inc.**, 908 20 St. N.W., Wash., D. C. CA **$1,365,323**. general contract PHYSICS BLDG. utilities, CHARLOTTESVILLE, VA. University of Virginia, Charlottesville, Va. CD 7/1, under LB.

Grady McRaney & Zollie Daniels, Prentiss, Miss. CA, $83,000. PLANT, PRENTISS, MISS. Jefferson Davis Civic Realty Co. Prentiss, Miss.

(Continued on page 104)

THE PENNSYLVANIA TURNPIKE

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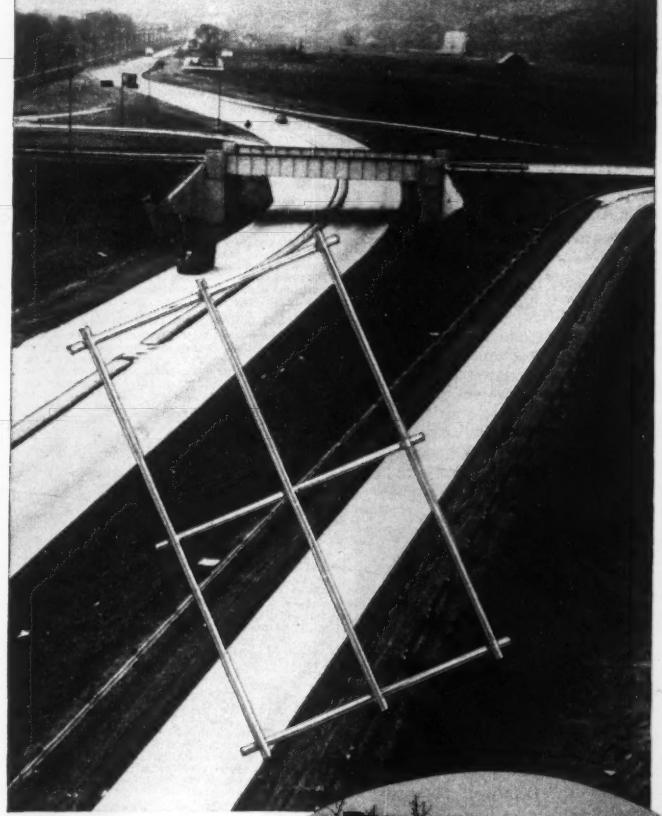

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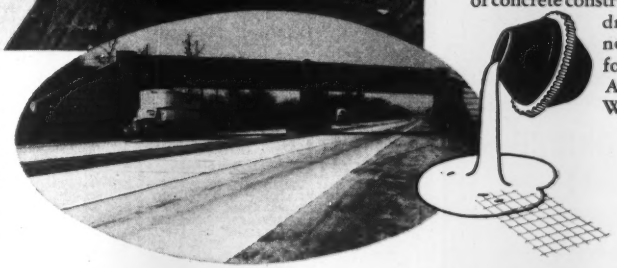
You use less steel, less concrete, with American Welded Wire Fabric, to provide slabs of equal structural strength. You save on labor too, because American Welded Wire Fabric is prefabricated, hence can be quickly and easily laid, continuously — to form longer road slabs—with fewer hands, in less time. Also there is less material to transport and unload at the job.

Many standard designs, styles and sizes of American Welded Wire Fabric are available from conveniently located jobber's and dealers' stocks. Our technical staff will be glad to supply specially engineered solutions to any special reinforcing problems you encounter in any type of concrete construction. Meanwhile, drop a line to our nearest sales office for a copy of the American Welded Wire Handbook.



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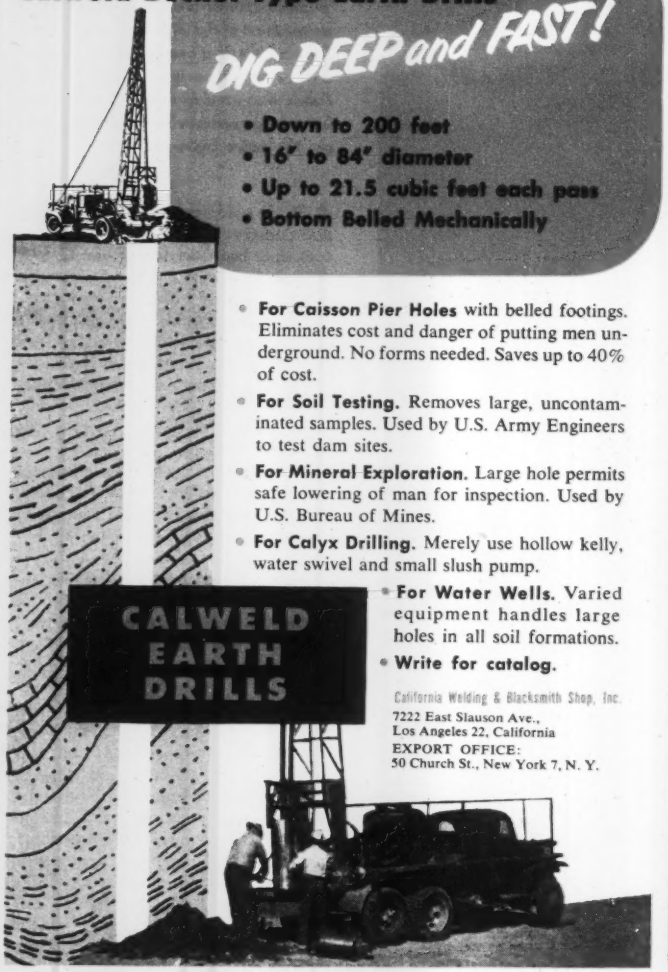

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(Continued from page 102)

E. B. Ludwig Constr. Co., 1350 Jefferson Hy., New Orleans, La. CA est. $82,000. WAREHOUSE, NEW ORLEANS, LA. Industrial Air Products Co., 907 S. Peters St., New Orleans, La.

▲ Taylor Constr. Co., 2875 N.W. 42 St., Miami, Fla. Separate Contracts. $3,000,000. 14 story, 420 APARTMENT units, Fourth and Kentucky Sts., LOUISVILLE, KY. E. W. Augustus, 370 Wallace Ave., Louisville, Ky., archt.

Fraser Brace & Co., 10 E. 40 St., New York, N. Y.

Turner Constr. Co., 120 Lexington Ave., New York, N. Y., and

Roane-Anderson Co., W. Tyrone Rd., Oak Ridge, Tenn., CA $15,000,000. newsprint and sulphate pulp MILL on Hiwassee River near Calhoun between Chattanooga and Knoxville, CHARLESTON, TENN. Bowater Southern Paper Corp., c/o Bowaters Newfoundland Pulp & Paper Mill Ltd., Corner Brook, Newfoundland. Total est. $50,000,000. CD 3/20.

MIDDLE WEST

BIDS ASKED—HEAVY CONSTRUCTION

O., Cleveland—WEST CONCOURSE—B.A. 9/11—City, City Hall, 550 ft. steel frame structure west concourse (first part) of passenger terminal at Cleveland, Hopkins Municipal Airport, $540,000. Plans deposit $10. Outcalt & Guenther, 13124 Shaker Square, archts. CD 3/14.

BIDS ASKED—BUILDINGS

Mich. Van Dyke—FIELD HOUSE AND GARAGE—B.A. 8/31—Warren Twp., School Dist., masonry field house and bus garage, Fitzgerald High School site, Nine Mile and Ryan Sts., Jensen & Keough, 15875 James Couzens St., Detroit, archts.

Ill., Melrose Park — FACTORY ADDN. — Bids Asked — Mississippi Valley Structural Steel Co., 1206 N. 25 Ave., steel factory addn.

SOON LETS CONTRACT—BUILDINGS

▲† Ill., Chicago—APARTMENT—Donald Easter, Agent, 11 S. La Salle St., Chicago zone, soon lets contract 17 story, bsmnt., rein.-con., brick apartment bldg. and garage, $17,000,000. Shaw, Metz & Dolio, 208 S. La Salle St., Chicago, 4, Ill. assoc. archts. CD 5/27.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

MICHIGAN—State Hy. Dpt., 222 Townsend St., Lansing, Zone 13,

Louis Garavaglia, 24240 Mound Rd., Center Line, Mich. CA, $688,096, est. $680,000. c. conc. 6.491 mi. M-140, M 11-65 C2, Berrien Co. CD 8/7, under LB.

MICHIGAN—State Hy. Dpt., 222 Townsend St., Lansing, Zone 13,

F. C. Atiewed, 4353 W. Warren St., Detroit, Mich. CA $854,839, est. $950,000. 2 steel. concrete bridges John C. Lodge and Edsel Ford Interchange, UI B 18 of 82-22-12 C1, UI B 19 of 82-22-12 C2 (UI 404-46), Wayne Co.; CA $797,179, est. $900,000. grade separation, R. R. over Edsel Ford Expressway near 12 St., 3 built up girder bridges and 2 rolled beam driveway bridges, UI X10 of 82-22-10 C1 (UI 391 46), Wayne Co. CD 8/7 under LB.

Ed McCarthy Constr. Co., P.O. Box 55, Station E, Cincinnati, 19, O., CA, $244,650, sewage treatment plant;

Thompson Constr. Co., 3840 Prospect St., Indianapolis, 44, Ind., CA, $257,650, sewerage system, PLAINFIELD, IND. Town Board, Plainfield, Ind. Bids July 2 awarded Aug. 4.

▲ ILLINOIS—State Div. Hys., Springfield,

M. Hoeffken Co. and Hoeffken Bros., Inc., 22 W "B" St., Belleville, Ill. LB, $318,881, c. conc. base course wid'n., and c. conc. base course 11.2 mi. U. S. 66, Madison Co.; LB, $466,126. c. conc. base course wid'n., and c. conc. base course 13.22 mi. on Ill. 3, Monroe and Randolph Counties;

S.M.H. Constr. Co., 1500 N. Adams St., Peoria, 3, Ill., LB, $149,173, c. conc. base course wid'n., c. conc. 0.72 mi. and 1.14 mi. U. S. 136, Fulton Co.;

Seneca Petroleum Co., Inc., 439 W. 33 St., Chicago, 16, Ill., LB, $198,975, intermittent bit. resurf. pavement patching on Ill. 9,78.97 and 100, Fulton Co.;

S. J. Groves & Sons Co., 1104 W. Reynolds St., Springfield, Ill., LB, $87,288, c. conc. base, course, bit. resurf. and culvert alterations 4.78 mi. Ill. 37, Jefferson and Franklin Counties;

Arrow Petroleum Co., 7419 Franklin St., Forest Park, Ill., LB, $112,042, bit. resurf. 4.82 mi. on Ill. 37, Franklin Co.;

Tri-State Engineering Co., P. O. Box 615, Benton, Ill., LB, $321,941, c. conc. base course wid'n. 4.8 mi. and conc. 0.56 mi. Ill. 37, Franklin Co.;

Zimmerly Constr. Co., Marshall St., Paris, Ill., LB $391,844, c. conc. base course, wid'n. 15.34 mi. on Ill. No. 1, Clark Co.;

Bushman Constr. Co., 4638 Mill Creek Parkway, Kansas City, 2, Mo., LB, $668,609, c. conc. 3.47 mi. Ill. 36 and 1 bridge Morgan Co.;

Eric Bolander Constr. Co., Winchester Rd., Libertyville, Ill., LB. $124,764, c. conc. base course, wid'n. 0.95 mi. and c. conc. base course 0.83 mi. U.S. 12, Lake Co.;

Johnston Roadbuilders Inc., 15 4 Ave., Joliet, Ill., LB. $142,142, bit. on grav. or crushed stone base course 4.09 mi. F.A.S. 795, Marion Co.;

Moore Bros. Inc., 2000 St. Clair Ave., East St. Louis, Ill., LB. $123,451, c. conc. base course wid'n., and c. conc. base course 4.13 mi. Ill. 13 and 157, St. Clair Co.;

G. S. Chastain, 1439 E. Olive St., Decatur, Ill., LB. $171,205, bit. on soil cement base course 7.09 mi. F.A.S. 699, Cumberland Co. Bids Aug. 6. CD 8/4.

Leininger Constr. Co., 30 N. La Salle St., Chicago, 2, Ill., LB. $86,992, resurfacing W. Division St. from Ashaland Ave. to Mozart St., CHICAGO, ILL. City, City Hall, Chicago, Ill. CD 9/29.

Wisconsin—State Hy. Comn., State Hy. Office Bldg., Madison,

I. H. Pertzsch, Onalaska, Wis., LB. $85,617, Contract 1, structure, grading 0.455 mi. The Connors Lake-Phillips Road, Forest Hy., Flambeau River Bridge and approaches, Proj. P 0-1 (4), Price Co. Bids Aug. 5. CD 7/18.

▲ WISCONSIN—State Hy. Comn., Madison,

Schultz-Thronson Constr. Co., Madison, Wis., LB. $128,400, Contract 1, grading, draining, traffic bound base course 7.92 mi. The Darlington-Blanchardville Road C.T. Hy. "F", S 0357 (4), Lafayette Co. 1.

N. M. Isabella, Inc., 714 Market Pl., Madison, Wis., LB. $121,703, Contract 1, c. conc. 1.906 mi. The Sau, City-Middleton Road (Springfield Hill) U.S. Hy. 12, Proj. T 04-2 (8), Dane Co.

Trierweiler Constr. Supply Co., Marshfield, Wis., LB. $140,528, Contract 1, c. conc. 0.508 mi. Pleasant St. City of Janesville, S.T. Hy. 11, Proj. U 4902 (3), Rock Co.

R. T. Madden, Janesville, Wis., LB. $94,887, Contract 1, c. conc. surf. 0.267 mi. E. Milwaukee St., City of Janesville, U. S. Hy. 51 and S. T. Hy. 26, Proj. T 4901 (3) and T 4902 (1), Rock Co.;

Schneider-Borchert Co., 606 W. Wisconsin St., Milwaukee, Wis., LB. $179,933, Contract 1, conc. base, and sheet asph. surf. 1.75 mi. W. Wisconsin Ave., City Milwaukee, U 016-1 (2 26), Milwaukee Co.

L. G. Arnold, Inc., Eau Claire, Wis., LB, $425,302, Contract 1, c. conc. 5.789 mi. The Chenequa-Pewaukee Road, U.S. Hy. 16, Proj. F 06-1 (4). Waukesha Co.;

Schuster Constr. Co., Denmark, Wis., LB., $955,777 Contract 1, c. conc. 4.575 mi. Eight St. (City of De Pere) and De Pere-Green Bay Road, S.T. Hy. 32 and U.S .Hy. 41,| Proj. T 3147 (1), F 060-1 (2) and U 4806 (1), Brown Co.;

Streu Constr. Co., Two Rivers, Wis., LB. $93,368, Contract 1, c. conc. wid'n. 0.57 mi. Washington St., City of Two Rivers S.T. Hy. 42, Proj. U 6501 (6), Manitowoc Co.;

John F. Bloomer Co., Appleton, Wis., LB, $384,064, Contract 1, comb. base wid'n., 19.97 mi. The Marshfield-Abbotsford Road, S.T. Hy. 13, Proj. T 04-4 (9), Marathon Co.

H. Turner & Son, Boscobeke, Wis., LB. $71,084. Contract 1, conc. base wid'n. 0.912 mi. Madison, Cherry, Jefferson and Maple Sts., City of Lancaster, U.S. Hy. 61 and S.T. Hys. 35 and 81, Proj. T 08-1 (9), Grand Co.;

Ryan Bros. Co., Janesville, Wis., LB. $87,876, Contract 1, grading, draining, base course 0.842 mi. Main St. Village of Cobb, Division St., Village of Cobb, Spring and Cobb Sts., Village of Highland, U.S. Hy. 18 and S.T.Hs. 80, Proj. T 017-1 (8), T 0208 (3) and T 0208 (4), Iowa Co. Bids Aug. 5. CD 7/18.

BUILDINGS

LOW BIDS AND CONTRACTS

Cleaver Constr .Co., 390 Morgan St., Akron, O. CA. $3?2 000. 2 story, bsmnt., 87x106 ft., steel, brick, L-shaped Seiberling Memorial HEALTH CENTER on Locust St. near W. Exchange St., AKRON, O. Summit Co., Bd. Trustees, 326 Locust St., Akron, O. CD 4/2.

R. Hansen Co., 2646 N. Moreland Blvd., Cleveland, O., LB, $953,210, est. $750,000. 1 story, brick, stone BUS GARAGE, at Windermere Station on Hayden Ave., East Cleveland, CLEVELAND, O. Cleveland Transit Sys., 1404 E. 9 St., Cleveland 14, O. Bids Aug. 1. CD 7/17.

▲ Wermuth Inc., 1036 St. Marys Place, Fort Wayne, Ind., CA. $2,240,000, STORE corner Rudisill and Piqua Sts. FORT WAYNE, IND. Sears, Roebuck & Co., S. Homan and W. Arthington Sts., Chicago, Ill. Bids July 22, awarded July 31. CD 7/17.

Geronetta Constr. Co., 857 Virginia St., Gary, Ind., CA, $560,000, 2 story, elementary SCHOOL, GARY, IND. School, City of Gary, 524 Garfield St., Gary, Ind. Bids Aug. 5. CD 7/8.

▲ L & F Builders, 3798 W. Myrick St., Chicago, Ill., Owner Builds, $1,200,000, 100 HOMES, 79 and Hamlin Ave. Area, CHICAGO, ILL. Nordlie & Co., 1106 S. Michigan Ave., Chicago, Ill., archts. Awarded July 31.

Lee Constr. Co., 127 N. Dearborn St., Chicago, 3, Ill., CA. $100,000, 12,000 sq. ft. FACTORY ADDN., CHICAGO, ILL. Sun Electric Co., 6323 Avondale Ave., Chicago, Ill. Bids July 17, awarded July 29. CD 7/16.

Kinnare Corp., 2816 W. Monroe St., Chicago, Ill., CA. $100,000, 1 story, 12,500 sq. ft. FACTORY, EVANSTON, ILL. Philip Lochman Co., 2405 W. Oakton St., Evanston, Ill. Awarded July 31. CD 3/21.

Continental Constr. Co., 240 N. Central Ave., Chicago, Ill., CA. $85,000, 10,000 sq. ft. FACTORY, FRANKLIN PARK, ILL. Brunner & Lay, 9300 King St., Franklin Park, Ill. Awarded July 30. CD 7/24.

† Lloyd Bros., 444 Walnut St., Wood Dale, Ill., CA. $513,992, 2 story, 42,000 sq. ft., brick, concrete frame, ADMINISTRATION bldg. GREAT LAKES, ILL. Ninth Naval Dist., Great Lakes Naval Training Station, Great Lakes, Ill. Awarded Aug. 4. CD 8/7, under LB.

Gilbert & Wolf, 7627 W. 63 St., Summit, Ill., Owner Builds, $450,000, 40 HOMES in Stickney Twp., SUMMIT, ILL. John S. Townsend, 11650 Longwood St., Chicago, 43, Ill., archt.

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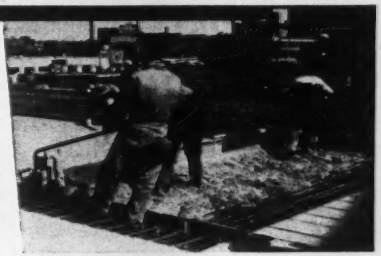

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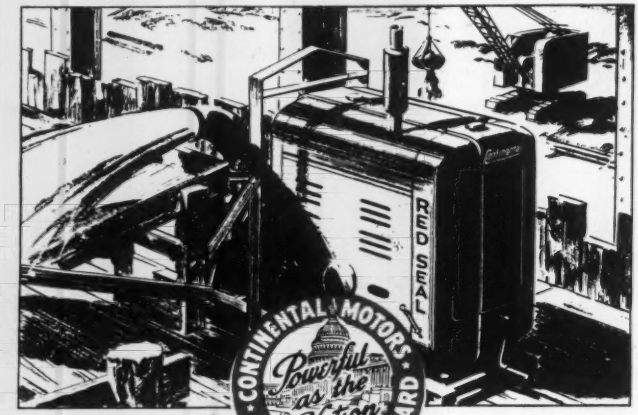

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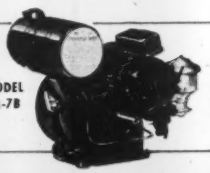

MODEL AA-7B

Continental Motors Corporation
MUSKEGON, MICHIGAN

Bd. Educ., 143 Bostwick St., N. E., Grand Rapids, Mich. rejected bids July 23, 2 story, bsmnt., brick, concrete elementary school, Mullock Park, GRAND RAPIDS, MICH. LB $515,500. Will re-advertise. CD 8/7 under LB.

WEST OF MISSISSIPPI

BIDS ASKED—HEAVY CONSTRUCTION

Minn., Olivia—B.A. 8/27—Renville Co., C. A. Strom, aud., grav. surf. 4 mi. between LT.H. 4 5 mi. north of Fairfax and east line of Renville Co., S.P. 65-516-02 (SAR 15) Minn. Proj. S 910 (2). Plans deposit 50c; grading 4 mi. between CAR 63 north of Danube and north line of Renville Co., S.P. 65-508-04 (SAR 1) Minn. Proj. S102 (9). Plans deposit 70c; grading 10 mi. between T.H. 212 2.5 mi. west of Hector and north line of Renville Co., S.P. 65-511-01 (SAR 16) Minn. Proj. S 67 (4). Plans deposit $125, $60,000. W. G. Pullen, co. hy. engr.

† **Montana**—B.A. 9/16—Bureau Reclamation, Dpt. Interior, Canyon Ferry, completion of Canyon Ferry Dam, power plant, switchyard, Canyon Ferry Unit. Spec. DC 3752. Extended date. CD 7/15.

BIDS ASKED—BUILDINGS

▲ † **N. M., Wingate**—BUILDINGS, MAGAZINES—B.A. 9/3—U. S. Eng., Box 1538, Albuquerque, 4 bldgs., 80 magazines, Wingate Ordnance Depot, Eng. 29-005-53-2, $1,000,000. Plans deposit $125. CD 7/31.

† **Colo., Camp Carson**—B.A. 9/4—U. S. Eng., 1799 Jackson St., Omaha, Nebr., tank maintenance and motor repair shops Inv. 25-066-53-15. CD 9/28/51.

† **Okla., Anadarko**—STORAGE BLDG.—Bids Asked—Dpt. Agriculture, Independence Ave. between 12 and 14 Sts. S.W., Wash., D. C., storage bldg. for peanuts, grain, etc.

† **Okla., Fort Cobb**—STORAGE BLDG.—Bids Asked—Dpt. Agriculture, Independence Ave. between 12 and 14 Sts. S.W., Wash., D. C., storage bldg. for peanuts, grain, etc., $100,000.

† **Tex., Decatur**—STORAGE BLDG.—Bids Asked—Dpt. Agriculture, Independence Ave. between 12 and 14 Sts. S.W., Wash., D. C., storage bldg. for peanuts, grain, etc., $100,000.

† **Tex., Elkhart**—STORAGE BLDG.—Bids Asked—Dpt. Agriculture, Independence Ave. between 12 and 14 Sts. S.W., Wash., D. C., storage bldg. for peanuts, grain, etc., $100,000.

† **Tex., Floresville**—STORAGE BLDG.—Bids Asked—Dpt. Agriculture, Independence Ave. between 12 and 14 Sts. S.W., Wash., D. C., storage bldg. for peanuts, grain, etc., $100,000.

† **Tex., Hallettsville**—STORAGE BLDG.—Bids Asked—Dpt. Agriculture, Independence Ave. between 12 and 14 Sts. S.W., Wash., D. C., storage bldg. for peanuts, grain, etc., $100,000.

† **Tex., Grapeland**—STORAGE BLDG.—Bids Asked—Dpt. Agriculture, Independence Ave. between 12 and 14 Sts. S.W., Wash., D. C., storage bldg. for peanuts, grain, etc., $100,000.

† **Tex., Sulphur Springs**—STORAGE BLDG.—Bids Asked—Dpt. Agriculture, Independence Ave. between 12 and 14 Sts. S.W., Wash., D. C., storage bldg. for peanuts, grain, etc., $100,000.

† **Tex., Whitesboro**—STORAGE BLDG.—Bids Asked—Dpt. Agriculture, Independence Ave. between 12 and 14 Sts. S.W., Wash., D. C., storage bldg. for peanuts, grain, etc., $100,000.

† **Tex., Whitney**—STORAGE BLDG.— Bids Asked—Dpt. Agriculture, Independence Ave. between 12 and 14 Sts. S.W., Wash., D. C., storage bldg. for peanuts, grain, etc., $100,000.

SOON LETS CONTRACT—BUILDINGS

▲ **N. M., Alamogordo**—HOUSING—U. S. Eng., Box 1538, Albuquerque, constr., soon lets contract manage, finance 168 duplexes, $1,500,000; 60 de duplexes, $875,000; 47 single dwelling units, Holloman Air Force Base, Eng. 29-005-53-7. CD 8/8.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

MINNESOTA—State Hy. Dpt., 1246 University Ave., St. Paul,

O'Loughlin & Hansen, Rochester, Minn. CA. $65,617. crushed rock base, plant-mixed bit. surf. 0.5 mi. in Kasson Dodge Co. Bids July 18. CD 7/2.

MISSOURI—State Hy. Comn., Jefferson City,

M. E. Gillioz, Monett, Mo. LB. $68,868. five 35 ft. rein.-con. girder spans, Sta. 1557 plus 87, Howell Co. Bids Aug. 1. CD 7/14.

▲ **MISSOURI**—State Hy. Comn., Jefferson City,

St. Louis County Bridge and Grade Co., 7929 Alabama Ave., St. Louis, Mo. LB. $372,785. 24 ft. b. conc. 3.672 mi., St. Charles Co.; LB. $311,676. 24 b. conc. 3.193 mi., St. Charles Co.

Union Constr. Co., 1401 Fairfax Trafficway, Kansas City, Kan. LB. $208,192. graded earth 24 ft. b. conc. 10.8 mi., Clay Co.

W. J. Menefee Constr. Co., 419 W. Main St., Sedalia, Mo. LB. $88,492. graded earth stabilized base, seal coat 1.683 mi., Howell Co.; LB. $230,855. graded earth, stabilized base, seal coat 4.508 mi., Howell Co.

Porter DeWitt Constr. Co., Dalton Bldg., Poplar Bluff, Mo. LB. $251,832. graded earth, 24 ft. b. conc. 2.033 mi., Warren Co.

Fred Weber Contg. Inc., 7929 Alabama Ave., St. Louis, Mo. LB. $1,077,497. graded earth, asph. conc. resurf., St. Louis. Bids Aug. 1. CD 7/14.

Northern Improvement Co., 633 First Ave. N., Fargo, N. D. LB. $88,641. paving, CARRINGTON, N. D. City, Carrington, N. D. L. Richmond, 901 N. 6 St., Grand Forks, N. D., engr. Bids July 28.

▲† Walden, Fulton & Payne, Box 628, Lubbock, Tex. CA. $1,944,929. airmen's dormitory, mess, admin., Ardmore Air Force Base, Eng. 34-066-52-83, ARDMORE, OKLA. U. S. Eng., Box 61, Tulsa 2, Okla. Bids July 1. Awarded Aug. 4. CD 7/8, under LB.

Lyons Gardens Apartments, 2300 Block Lyons Ave., Houston, Tex. Owner Builds. $35,000. water lines, HOUSTON, TEX. R. C. Saner, 2518 Times St., Houston, Tex., engr.

Lyons Gardens Apartments, 2300 Block Lyons Ave., Houston, Tex. Owner Builds. $65,000. sanitary sewers; $60,000. storm sewers, HOUSTON, TEX. CD 2/29.

Farnsworth & Chambers Inc., Box 74, Houston, Tex. LB. $106,975. sanitary sewers on Cullen Blvd., Holmon and Scott Sts., HOUSTON, TEX. City, City Hall, 900 Brazos St., Houston, Tex. Bids Aug. 5. CD 6/6/51.

Lyons Gardens Apartments, 2300 Block Lyons Ave., Houston, Tex. Owner Builds. $63,000. steel constr. asph. paving, HOUSTON, TEX. R. C. Saner, 2518 Times St., Houston, Tex., engr.

† Crocker & Ellett Inc., 1863 Wazee St., Denver, Colo., LB. $99,115, est. $69,905, Parshall flume and inlet for Aspen Creek Siphon Power Canal No. 1, Station 705 plus 98.60, Colorado Big Thompson Proj. Spec. DC 3751, COLORADO Bureau Reclamation Dpt. Interior, Estes Park, Colo. Bids July 31. CD 7/15.

COLORADO—State Hy. Dpt., Denver,

Colorado Constructors Inc., 1725 W. 39 Ave., Denver, Colo., LB. $62,871, est. $64,921, seal coat and stone screening 17.347 mi. SH No. 6, Colo. Proj. SP 2-6-511, 27.726 mi. SH Hy. No. 12 between Ear and Delhi, Colo. Proj. SP 5-12-515, Pueblo and Las Animas Counties. Bids Aug. 5.

BUILDINGS

LOW BIDS AND CONTRACTS

Fairbanks, Morse & Co., 220 E. Fifth St., St. Paul, Minn. CA. $112,000. furnish, install diesel engine GENERATING UNIT, auxiliaries, SPRING VALLEY, MINN. Village, P. Utilities Comn., R. L. Snyder, chn., Spring Valley, Minn. Associated Consultants, 456 Builders Exchange Bldg., Minneapolis, Minn., engrs. Bids July 28.

R. E. Tansey, 2 Pitman St., Kirkwood 22, Mo. CA. 1 story, 75x90 ft., concrete PLANT addn. 400 ft. north of Natural Bridge Rd., BERKELEY CITY (ST. LOUIS 21 P.O.), MO. Airpath Instrument Co., Lambert St. Louis Airport, St. Louis, Mo.

Vollmen Bros. Constr. Co., foot of Victor St., St. Louis 4, Mo. LB. $498,905. HOME ADDN. convalescent wing, chapel bldg., KIRKWOOD (ST. LOUIS 22 P.O.) MO., St. Agnes Home, Carmelite Sisters in charge, 10341 Manchester Rd., Kirkwood 22, Mo. Raymond E. Moritz, Chemical Bldg., 721 Olive St., St. Louis 1, Mo., archt. Bids July 25.

King & Sheets, City National Bank Bldg., Houston, Tex. Owner Builds. $340,000. 46 DWELLINGS, ANGLETON, TEX. CD 5/29.

FAR WEST

BIDS ASKED—HEAVY CONSTRUCTION

† Calif., El Centro—FUEL STORAGE—B.A. 9/9—Dpt. Navy, San Diego, additional aviation fuel storage at Naval Auxiliary Air Station NOY 27059, Spec. 29059, $300,000. Plans deposit $30.

† Oregon—GANTRY CRANES—B.A. 9/9—U. S. Eng., City-County Airport, Walla Walla, Wash., 2 fishway gantry cranes for McNary Dam, Inv. 53-10.

† Oregon—B.A. 9/11—U. S. Eng., Pittock Block, Portland, main control switchboard, Lookout Point Dam, CIVENG 35-026-53-26.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

UTAH—State Road Comn., State Capitol, Salt Lake City Utah,

Germer, Abbott & Waldron, Tremonton, Utah, CA, $89,341 est. $83,510, grav. 3.563 mi. between Howell and U. S. 30, Fed. Aid Secondary Proj. S-312 (1), Box Elder Co. Bids July 29.

City, City Hall, Elko, Nev., rejected bids July 14, sewage treatment plant, LB, $240,000. ELKO, NEV. CD 7/23, under LB.

† OREGON—Bureau P. Rds., Morgan Bldg., Portland,

Murray & Stanford, Box 191, Bend, Ore. CA $81,573. Bridge Zig Zag River, Mt. Hood Hy., Clackamas Co. Bids Aug. 5. CD 7/25.

† Columbia Equipment Co., 1240 S.E. 12 St., Portland, Ore. LB $85,140. Revolving crawler crane, Lookout Point Dam, CIVENG 35-026-53-3, OREGON. U. S. Eng., Pittock Block, Portland, Ore. Bids Aug. 5. CD 7/15.

† U. S. Eng., Pittock Block, Portland, Ore. rejected bids July 29. grav. embankment, Southern Pacific R.R. line, CIVENG 35-026-53-10, OREGON. U. S. Eng., Pittock Block, Portland, Ore. LB $49,530. CD 8/7, under LB

P. S. Lord, 4507 S. E. Milwaukie St., Portland, Ore. LB $219,435. Sewage treatment plant CORVALLIS, ORE. City, City Hall, Corvallis, Ore. Bids Aug. 1. CD 7/17.

Ausland & Dodson, 781 Liberty St., Ashland, Ore. LB $150,808. Water treatment plant, NEWPORT, ORE. City, City Hall, Newport, Ore. Bids Aug. 4. CD 7/23.

† U. S. Eng., 180 New Montgomery St., San Francisco, Calif., rejected bids June 25, parking areas, rehabilita-

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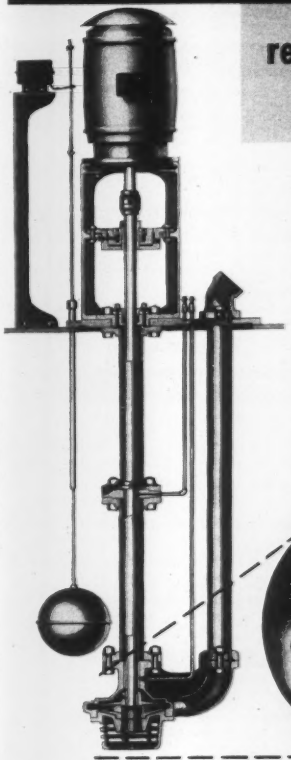

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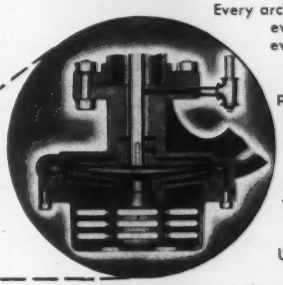

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tion bldgs. at Parks Air Force Base. ENG 04 203-52-43, Spec. 1162, PLEASANTON, CALIF. LB, $691,440. CD 7/2, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ Henry M. Mason Co., 2206 N. W. Thurman St., Portland, Ore. CA $1,500,000. Coffee mfg. PLANT, PORTLAND, ORE. Millwood Co., Swan Island, Portland, Ore. S. Clement Horseley, 6360 N.E. Simpson, St., Portland, Ore., engr. Awarded Aug. 4.

▲† L. C. Anderson Co., 3040 Hancock St., San Diego, Calif., LB, $2,595,000, constr. additional TRAINING FACILITIES, Naval Training Center, Spec. 32615, NOY 71061, SAN DIEGO, CALIF. Dpt. Navy, San Diego, Calif. Bids Aug. 5.

ALASKA

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

City Electric Co., 444 H St., Anchorage, Alaska. CA $65,788, high intensity approach light lane at airport. Inv. 852-493, ANCHORAGE, ALASKA. Civil Aeronautics Admin., Dpt. Commerce, Box 440, Anchorage, Alaska. Bids June 13. CD 5/29.

CANADA

BUILDINGS

LOW BIDS AND CONTRACTS

▲ E. G. M. Cape & Co., P.O. Box 410, Dartmouth, N. S., CA, $1,261,396, OFFICERS QUARTERS, Incl. heating tunnel, Naval Station, HALIFAX, N. S. Defence Constr. Ltd., 1032 Gottingen St., Halifax, N. S. Bids June 17, awarded Aug. 5. CD 5/29.

U. S. POSSESSIONS

BIDS ASKED—HEAVY CONSTRUCTION

† Puerto Rico, Aguadilla—MESS ADDN.—B.A. About 9/16—U. S. Eng., P. O. Box 4970 Jacksonville, Fla., officers' mess addn., Ramey Air Force Base, Serial No. Eng 08-23-53-19.

AMERICANS ABROAD

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† Merritt-Chapman & Scott Corp., 17 Battery Pl., New York, 4, N. Y., CA, $1,707,198 constr. additional facilities at Kindley Air Force Base, Fort Bell, BERMUDA. U. S. Eng., (Atantic Div.) 347 Broadway, New York, N. Y.

Proposed Projects

WATER SUPPLY

Fla., St. Augustine—City, WW imprvs., $400,000. Black & Assocs., Gainesville, Fla., consult. engrs.

▲ Kan., Wichita—City, c/o C. C. Ellis, clk., expansion water facilities, 20 wells, water lines, treatment plant, $11,560,300. CD 9/11/46.

Mich., Alma—City, City comn., water sys., incl. repairing, cleaning wells, rebuilding 1 m.g. underground storage tank, drilling test wells, 12-in. water mains, $200,000, Ayres, Lewis, Norris & May, 506 Wolverine Bldg., Ann Arbor, consult. engrs.

▲ Neb., Omaha—Metropolitan Utilities Dist., 18 and Harney Sts., expansion of water plant at Florence Station, $5,233,600, Burns & McDonnell Eng. Co., 95 and Troost Sts., Kansas City, Mo., consult. engr. CD 7/31.

Tex., Houston—City, City Hall, 900 Brazos St., concrete-lines "Poor Farm" 2¼ mi. long, sides and bottom will be concrete to provide drainage, $250,000. CD 8/2/51.

Va., Emporia—Town, Town Hall, water treatment plant, $250,000, Myron A. Sturgeon, 2124 Kimball Terrace, Norfolk, consult. engr.

SEWERS, WASTE DISPOSAL

▲ Mich., Detroit—City, P. Wks. Dpt., 3.6 mi. 10 ft. Interceptor Sewer from Michigan and Southfield to Jefferson west and Bayside. $5,000,000. George R. Thompson, Guardian Bldg., city engr. CD 9/6/51.

Minn., St. Louis Park—Village, J. Justad, clk., $200,000. bond election Sept. 9, municipal incinerator, P. W. Smith, village engr.

Mo., Lexington—City, exten. sewer lines, disposal plant, Odessa, $380,000, J. W. Shikles & Co., Reliance Bldg., Kansas City, Mo., consult. engrs.

▲ Pa., Port Vue—Joint Boro's of Port Vue and Versailles, Versailles, sewage treatment plant, $1,000,000, Gannett, Fleming, Corddry & Carpenter, Inc., 600 N. 2 St., Harrisburg, engr. CD 11/1/45.

BRIDGES

▲ D. C., Wash.—Dist. of Col. Bridge Division, District Bldg., bridge Kenilworth Ave. at Benning Road, N. E., $1,000,000; bridge Kenilworth at Dean Ave. N. E., elevated highway, $1,100,000.

STREETS AND ROADS

Colo., Denver—City and Denver Co., City and County Bldg., Denver, Street Paving District No. 189, c. conc. curb, gutter, sidewalk, grav. base course, b. conc. paving, etc. $300,850. Terry Owens, City and County Bldg., city engr.

EARTHWORK, WATERWAYS

▲† Utah—Bureau of Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo., plans 3.3 mi. 9.5 ft. wide, concrete lined tunnel from Weber River to mouth of Weber Canyon, with dividing structure at Wasatch Mountain, Weber Canyon Project. $1,350,000 appropriated. Total project to cost $70,000,000, will include constructing 12.8 mi. Willard Bay Dike Dam (hydro and irrigation); Wanship and Lost Creek Dams, raising East Canyon and Echo Dams. CD 9/7/44.

Utah, Provo—Utah Power & Light Co., Kearns Bldg., Salt Lake City, hydro-electric power plant at Deer Creek Res. Dam, $600,000. J. A. Hale, Kearns Bldg., Salt Lake City, consult. engr.

▲ Quebec—Quebec Hydro-Electric Comn., Prov. Govt. Quebec City, development of hydro-electric power on Bersimis River about 30 mi. west of Baie Comeau on north shore of St. Lawrence River, power station at Les Boules near town of Rimouski, Gaspe Peninsula about 500,000 horse power, Approx. $100,000,000.

AIRPORTS

† Colo., Denver—TRAINING AIDS—U. S. Eng., 1709 Jackson St., Omaha, Neb., 1 and 2 story 115x221 ft., frame, training aids bldg., at Lowry Air Force Base, 25-066-53-24. Patrick D. Horgan, 1180 Elati St., Denver, Colo., consult. engr. and archt. CD 11/21/51.

S. C., Spartanburg—AIRPORT—City, City clk., City Hall, exten. NE-SW runway at municipal airport, $300,000.

LATIN AMERICA

Mexico, Puebla, Teziutlan—EDUCATIONAL CENTER—State Govt., Gen Fafael Avila Comacho, gov., Palacio del Estado, Puebla City, Pue., educational center, $600,000.

Mexico, Mexico City—Nacional Financiera, S.A., V. Carranza, 25, radio center, $700,000.

▲ Mexico, Mexico City—HOTEL—Lic. Eduardo Suarez, Lopez No. 1, hotel, $3,500,000.

PUBLIC BUILDINGS

Ark., Pine Bluff—SCHOOL—Pine Bluff School Board No. 3, Pine Bluff, school, $549,316.

Calif., Lindsay—SCHOOL—Lindsay Elementary School Dist., 250 N. Harvard Ave., plans by Robt. C. Keastner, 210 N. Encina, Ave., Visalia, Washington School $600,000.

Calif., Orosi—SCHOOL—Orosi Union High School, Orosi plans by Robt. C. Kaestner, 210 N. Encina Ave., Visalia, high school, $500,000.

▲ Calif., Richmond—SCHOOLS—Richmond Union High School District, 1108 Bissel Ave., Richmond plans by John Warnecke, 507 Howard St., San Francisco De-Anza Junior and Senior High School at El Sobrante School site, $1,546,000. CD 2/19/48.

Calif., Stockton—RECEIVING, etc.—State Div. Architecture P. Wks. Bldg., Sacramento, receiving and treatment facilities at State Hospital, $851,000 CD 8/29/45.

▲ Fla., Gainesville—PLANT ADDNS.—City, electric plant addns., $1,500,000. CD 6/8/50.

▲ Ga., Atlanta—SCHOOL IMPRVS.—Fulton Co. Bd. Educ., Court House, Atlanta, bond election Sept. 16, school imprvs. $2,000,000. CD 1/11.

Ga., Talbotton—HOUSING—Talbotton Housing Auth. Talbotton, 100 housing units, $750,000.

▲ Ill., North Chicago—SCHOOL—School District No. 64 110 18 St., plans by Fisher & Bryant, 79 W. Monroe St. Chicago, Zone 3, junior high school, $1,000,000.

Ill., Round Lake—SCHOOL—Grays Lake-Round Lake High School District, plans by Barry & Kay, 53 W. Jackson St., Chicago, Zone 4, high school, $650,000. CD 12/6/50.

▲ Ill., Wood River—HOSPITAL ADDN.—Wood River Township Hospital, Bd. Directors, East Alton-Edwardsville Road, plans by Jamieson & Soearl, 1696 Arcade Bldg., 812 Olive St., St. Louis, 1, Mo., hospital addn., $3,000,000.

Ind., Decatur—COMMUNITY BLDG.—City, John Doan, Mayor, community bldg., $750,000.

Ky., Lexington—HOSPITAL—Crippled Children's Hospital, Lexington, plans by John T. Gillig, 180 Walnut St., brick, stone trim 50-bed hospital, Richmond Rd., $750,000.

Mass., Longmeadow—SCHOOL—Town, School Dpt., 811 Longmeadow St., plans by Alderman & MacNeish Architectural & Eng. Service, 134 Chestnut St., Springfield, junior and senior high school, Bliss Rd., William St. and Grassy Gutter Rd., $900,000. CD 5/12.

Mass., Malden—SCHOOL—City, Supt. Schools, C. W. Holmes, Senior High School, Malden, plans by Edmond I. Leeds & Assoc. Inc., 153 Brighton Ave., Allston, school, Linden area, $500,000. CD 5/28.

▲ Mass., Natick—SCHOOL—Town, supt. schools, plans by Coolidge, Shepley, Bulfinch & Abbott and Smith & Sellew, 1 Court St., Boston, senior high school, $3,500,000, Edwin P. Mahard, 473 Statler Bldg., Boston, elec. engr. CD 12/17/51.

▲ N. Y., Brooklyn—HOUSING—New York City Housing Auth., 63 Park Row, New York, Zone 38, plans by Skidmore, Owings & Merrill, 575 Madison Ave., New York, Gowanus Houses on Richards and Dwight Sts. $3,000,000. CD 3/18/48.

▲ N. Y., Brooklyn—HIGH SCHOOL—Bd. Educ., 49 Flatbush Ave. Ext., Zone 1, plans by Kelly & Gruzen, 80 Fifth Ave., New York, Zone 3, Midwood High School on 35 acre tract at Rutland Rd., Kingston Ave. and Winthrop St. $6,000,000. (Correction, architects address). CD 7/22.

▲ N. Y., New York—SCHOOL—Bd. Educ., 49 Flatbush Ave. Extens. Brooklyn, Zone 1, plans by William Gehron, 101 Park Ave., P. S. 191 at 20-28 Amsterdam Ave. between W. 60 and 61 Sts. $1,750,000.

▲ Pa., Harrisburg—STATE OFFICE—General State Auth., 18 and Herr Sts., plans by Lacy, Atterton & Davis, Sterling Hotel Bldg., Wilkes-Barre, 18 story state office bldg. at 7th and Forster Sts. $10,000,000. A. F. Jones, c/o owner, ch. engr. CD 6/12/50.

Pa., New Castle—SCHOOL—School Dist., plans by Thayer Co., 408 Greer Bldg., 1 and 2 story, brick, steel Lincoln Garfield School addn., $600,000. CD 4/29.

▲ Pa., Phila—GARAGE—Phila. Parking Auth., Packard Bldg., plans by Harbeson, Hough, Livingston & Larson, 117 S. 17 St., garage, $1,250,000.

▲ Tex., Fort Worth—SCHOOLS—Fort Worth Independent School Dist., 409 E. Weatherford St., plans by Preston M. Geren, Neil P. Anderson Bldg., Paschal High School, $1,250,000; addn. to Carver Junior High School, $750,000; plans by Jos R. Pelich, Commercial Bldg., Forest Hill-Oaklawn Junior High School, $375,000; plans by Wyatt C. Herrick, First National Bank Bldg., Meadowbrook Junior High School addn., auditorium and gymnasium, $300,000; plans by Huoert H. Crane, 3/11 Camp Bowie Blvd., Ridgles West School, $325,000; plans by Herman G. Cox, Neil P. Anderson, Bldg., Como Elementary School, $300,000; plans by C. U. Chromaster, Century Bldg., Worth Heights Elementary School, $325,000; plans by Jno. W. Floore, 1401 W. Lancaster St., Westcliff School, $315,000; plans by Easterwood & Easterwood, Neil P. Anderson Bldg., Brooklyn Heights School. CD 6/3.

▲ Tex, San Antonio—LABURATURIES, ETC.—Union Junior College Dist., W. W. McAllister, 401 Navarro St., 6 laboratories, $300,000; 6 engineering shops, $325,000; fine arts bldg., $325,000; auditorium, $300,000; 35 classrooms, $450,000; student union-library, $315,000. San Antonio College expansion. CD 11/7/45.

Vt., Bennington—SCHOOL—Bennington School Dist., plans by James E. Britton, 315 Federal St., Greenfield, Mass., elementary school, $500,000.

▲ Va., Arlington—SCHOOL—Arlington County School Bd., 1426 N. Quincy St., plans by Rhees E. Burket, 1223 Conn. Ave., N. W., Wash., D. C., Second Sect., 2 story, rein.-con., brick, masonry Wakefield Junior-Senior High School, $1,500,000, Beall & LeMay, 1726 M St. N. W., Wash., D. C., consult. engrs.

▲ Va., Fairfax—SCHOOL—Fairfax County School Bd., plans by Robert A. Willgoos, 300 Montgomery St., Alexandria, 2 story, brick, concrete, masonry Annandale School, Annandale, $1,250,000, Beall & LeMay, 1726 M. St. N. W., Wash., D. C., consult. engrs. CD 4/10.

▲ W. Va., Charleston—SCHOOLS—Kanawha Co. School Bd., Court House, Charleston, plans by Greife & Daley, Payne Bldg., Charleston, Kanawha Elementary School; plans by Martens & Son, 1503 Virginia St. E., Charleston, Nitro Elementary-High School, $1,225,000; plans by Herbert Kyle, Union Bldg., Charleston, W. Va. senior high school, $900,000. CD 12/3/51.

COMMERCIAL BUILDINGS

▲ Conn., New Haven—EQUIPMENT—Southern N. E. Telephone Co., 227 Church St., plans by Douglass Orr, 111 Whitney Ave., New Haven, 10 story, equipment bldg., Orange and Wall Sts., $6,000,000. Hubbard Lawless & Blakeley, 110 Whitney Ave., New Haven, consult. engrs. Henry A. Pfisterer, 111 Whitney Ave., New Haven, struc. engr. CD 6/24/48.

▲ Ill., Chicago—CHAPEL, etc.—St. Patricks Parish, 122 S. Des Plaines St., plans by Edo J. Belli, 8 S. Dearborn St., Chicago, 3, Ill., 3 story, bsmnt., chapel and high school, 2 story gymnasium and faculty house at Belmont Ave. and Austin Blvd. $2,000,000.

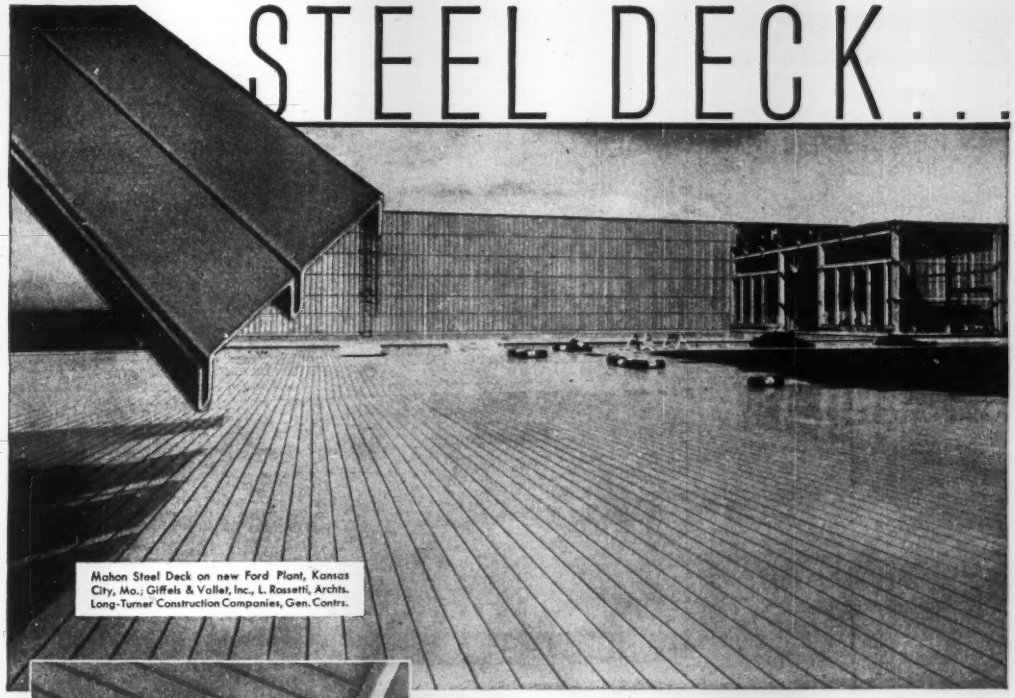
▲ Ind., Indianapolis—HOSPITAL—East Side Community Hospital, Indianapolis, plans by Daggett, Robert Frost & Assocs., 350 E. Fall Creek Parkway, N. Drive, Indianapolis, 300-bed hospital on 28-acre site at Ritter Ave. and 16 St., $4,800,000.

▲ Md., Baltimore—SHOPPING CENTER—Moss-Rouse Corp., 345 St. Pau Place, Zone 2, plans by Palmer, Fisher, Williams & Nes, 1020 St. Paul St., shopping center nuortheast section. $10,000,000. Daniel Kiley, Charlotte, Vt., design engr.

▲ Mich., Lansing—SUBDIVISION—Norman A. Fedewa, Saginaw St., Dawn Haven subdivision on 80 acres incl. 137 bldg. lots, 5¼ mi. west of city limits. $1,400,000.

(Continued on page 110)

STEEL DECK . . .



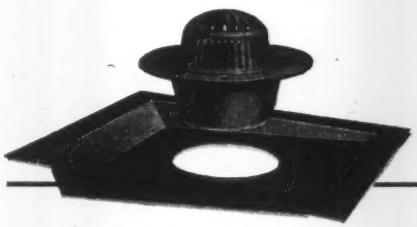
Mahon Steel Deck on new Ford Plant, Kansas City, Mo.; Giffels & Vallet, Inc., L. Rossetti, Archts. Long-Turner Construction Companies, Gen. Contrs.

BUILT-UP SADDLES ELIMINATED

Built-up saddles are eliminated in Steel Deck Roofs. Purlins can be set to create valleys at sump locations in the drainage area. Steel Deck can be warped to conform. No additional deck plates are required—no cutting or fitting necessary.

1,070,000 Sq. Ft. of Mahon Steel Deck Protects New Ford Plant at Kansas City!

For industrial plants large and small, auditoriums, armories, theatres and commercial buildings of all types, steel deck provides the most economical, permanent roof construction available today. No matter how you figure it, your total roof cost per square foot will be less than any other type of roof construction with comparable "U" Factor . . . because, Steel Deck can be insulated to the exact degree to meet the thermal requirements of temperature range in any given locality—and, Steel Deck's light weight permits additional economies in the supporting structure. Mahon Steel Deck is available in Galvanized or Enamel Coated Steel . . . it is a product embodying distinctive and desirable features in both design and quality—for instance, the vertical leg stiffening ribs eliminate all horizontal or angular surfaces where troublesome dust may accumulate. In the enamel coating process, the metal is chemically cleaned and phosphated to provide paint bond, and the protective coat of synthetic enamel is baked on at 350° F. prior to roll-forming. These are items that warrant your consideration when selecting Steel Deck for the roof of any building. See Mahon's Insert in Sweet's Files for complete information, or write for Catalogs B-52-A and B.



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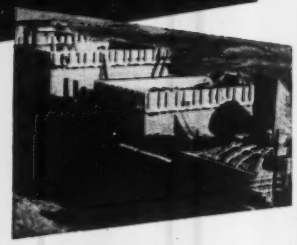

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(Continued from page 108)

▲ **Pa., Abington**—RESIDENTIAL AND SHOPPING CENTER—Brentwood Farms Inc., c/o Isard-Risen Co., 16 St. and Godfrey Ave., Phila., Pa., residential development Welsh and Huntingdon Rds., etc., $2,500,000; shopping center, Old York Rd., $1,000,000.

▲ **Pa., Cheltenham**—SHOPPING CENTER—Oak Lane Manor Realty Co., Front St. and Johns Rd., shopping center. $2,000,000.

▲ **Pa., Erie**—APARTMENT HOTEL—Jos. Donovan, 828 Peach St., plans by John S. Gifford and John Sunds, 118 W. 8 St., 10 story, bsmnt., 260x90 ft. apartment hotel and stores. $1,250,000.

▲ **Pa., Phila.**—LIBRARY—Americal Philosophical Society, Drexel Bldg., plans by Sydney E. Martin, 117 S. 17 St., library. $2,000,000.

Pa., Phila.—DEPARTMENT STORE—Lit Brothers, Eight and Market Sts., plans by Thalheimer & Weitz, 1315 Walnut St., department store in northeast or in Olney Sect. $500,000. CD 2/26/47.

▲ **R. I., Providence**—HOSPITAL—Rhode Island Hospital, 593 Eddy St., plans by Coolidge, Shepley, Bulfinch & Abbott, 1 Court St., Boston, Mass., 10 story, bsmnt., hospital, Eddy and Lockwood Sts. $8,420,000. CD 5/13/46.

S. C., Columbia—HOTEL—Hotel Columbia, 1301 Gervais St., hotel addn. $500,000.

▲ **Tex., Houston**—OFFICE—Associated General Contractors of America, 2103 Crawford St., OFFICE, McGowan St. between Crawford and LaBranch Sts. $1,000,000.

▲ **Tex., Houston**—MARKET—Farmer's Marketing Assn., 2520 Airline St., Houston, farmer's market 37 acre track near Santa Fe underpass off Old Spanish Trail, $1,000,000.

▲ **Tex., Midland**—OFFICE—George Abell, Midland, plans by David S. Castle Co., engr. and archt., 1082 N. First St., Abilene, 12 story office, $1,250,000.

▲ **Tex., San Antonio**—DWELLINGS—Rogers-Jaffe-Martin Co. Milam Bldg., San Antonio, plans by Shoop & Roberts 122 W. Olmos St., San Antonio, Group 1, 40 dwellings $325,000; Group 2, 45 dwellings, $375,000; Group 3, 50 dwellings, $400,000.

▲ **Va., Norfolk**—HOUSES AND SHOPPING CENTER—Duke Constr. Co., Military Hy. and Bells Rd., plans by E. Tucker, Carlton, 1009 E. Main St., Richmond, 300 frame, masonry houses, $2,500,000; masonry shopping center incl. 15 stores, $750,000.

INDUSTRIAL BUILDINGS

▲ **Calif., Los Angeles**—BREWERY—Anheuser-Busch, Inc., August A. Busch, Jr., Pres., 721 Pestalozzi St., St. Louis, 18, Mo., beer brewery, 65-acre site in San Fernando Valley, Los Angeles Co. near here. $15,000,000.

▲ **Calif., Los Angeles**—PLANT—Union Carbide & Carbon Corp., 2770 Leonis Blvd., Los Angeles, polyethylene plant. $36,000,000.

Ill., Arlington Heights—FACTORY—Vapor Heating Co., 80 E. Jackson Blvd., Chicago, plans by Graham, Anderson Probst & White, 80 E. Jackson Blvd., Chicago, Zone 4, 1 and 2 story bsmnt., 40,000 sq. ft. first unit factory, office, Central St., $400,000. CD 4/16.

Ill., Bellwood—FACTORY—Chicago Die Casting Co., 2512 Monroe St., Chicago, plans by Ben and Geo. Larson, 506 W. 63 St., Chicago, Ill., 45,000 sq. ft. factory, $375,000.

Ill., Chicago—FACTORY—Ceco Steel Products Co., 5601 W. 26 St., Cicero, 160,000 sq. ft. factory, at Broadview. $500,000.

Ill., Northbrook—FACTORY—Hanson Scale Co., 525 N. Ada St., plans by Engineering Systems Inc., 221 N. La Salle St., Chicago, 1, Ill., 45,000 sq. ft. factory $400,000.

Ill., Stockton—FACTORY—Kraft Foods Co., 500 Peshtigo Court, Chicago, Zone 11, cheese processing factory, $900,000.

▲ **La., Logansport**—COMPRESSOR STATION—Southern Natural Gas Co., Watts Bldg., Birmingham, Ala., 3,300 h.p. compressor station. $1,021,500.

▲ **N. J., Jersey City**—TERMINAL—Jersey City Liberty Terminal Corp., sub. The Foundation Co., 57 Williams St., New York, N. Y., truck, railroad and marine terminal, Communipaw District, $27,000,000.

Tex., Borger—REFINERY—J. M. Guber Corp., Oil and Gas Bldg., Houston, gasoline refinery imprv., expansion, $750,000.

Tex., Childress—SHOPS—Burlington Lines, 925 Texas St., Houston, plans by Wyatt C. Hedrick, engr. and archt., 5201 Fannin St., Houston, motive power shops expansion for heavy repair and maintenance of diesel engines, $300,000; roundhouse imprvs. $90,000; yard trackage imprvs., expansion, $60,000.

Tex., Conroe—PLANT—Columbia Carbon Co., Conroe, carbon black plant expansion, $675,000.

Tex., Conroe—GASOLINE PRODUCTION UNIT—Midland Gasoline Co., Conroe, gasoline production unit, $500,000.

Tex., Fort Worth—MANUFACTURING UNIT—Aero Enterprises Inc., Meachan Field, aircraft parts mfg. unit, $300,000.

Tex., Midland—GARAGE—George Abell, Midland, Plans by David S. Castle Co., engrs. and archts., 1082½ N. First St., Abilene, 5 story, parking garage, $350,000.

▲ **Tex., Orange**—PLANT—Allied Chemical & Dye Corp., Orange, ethylene-glycol plant. $5,675,000.

Va., Norfolk—GARAGE—Richmond Greyhound Lines, 412 E. Broad St., Richmond, plans by W. S. Arrasmith & Assoc., 421 W. Market St., Louisville, Ky., 2 story masonry, steel bus garage. $300,000.

▲ **W. Va., Moundsville**—PLANT—National Aniline Div., Allied Chemical and Dye Corp., 40 Rector St., New York, N. Y., chemical plant, $2,300,000.

Que., Ville La Salle (Postal District Montreal)—BREWERY—John Labatt Ltd., 7 Simcoe St., London, Ont., brewery, $500,000.

UNCLASSIFIED

▲ **Arkansas**—GAS LINES—Arkansas-Missouri Power Co., Blytheville, 105 miles gas lines, 2⅜ in. to 10¾ in. to serve 13 communities. $3,000,000. CD 6/11/46.

Calif., Bakersfield—TELEVISION STATION—Bakersfield Broadcasting Co., Box 1432, Bakersfield, television station. $210,000.

Calif., Fresno—TELEVISION STATION—California Inland Broadcasting Co., T. W. Patterson Bldg., Fresno, television station. $428,950. Craven, Lohnes, & Culver, Munsey Bldg., Wash., D. C., consult. engrs.

Calif., Fresno—TELEVISION STATION—KARM, The George Harm Station, 1333 Van Ness Ave., Fresno, television station. $398,530. A. D. Ring & Co., Munsey Bldg., Wash., D. C., consult. engrs.

▲ **Colorado**—RURAL DISTRIBUTION LINES—Southeast Colorado Power Assn., La Junta, 973 mi. rural distr. lines, sys. imprvs. and 67 mi. transmission lines, Prowers Co., $2,275,000. Flora Engr. Co., 56 and Holly Sts., Denver, Colo., consult engr. CD 7/10.

Colo., Colorado Springs—TELEVISION STATION—TV Colorado Inc., Exchange Natl. Bank Bldg., Colorado Springs, television station. $304,000. E. C. Page, Bond Bldg., Wash., D. C., consult. engr.

Colo., Denver—TELEVISION STATION—Coloradc Television Corp., 1022 Midland Savings Bldg., television station. $394,000. A. Earl Cullum, Jr., 4710 Lemmon Ave., Dallas, Tex., consult. engr.

Conn., Bridgeport—TELEVISION STATION—Southern Connecticut and Long Island Television Co., 114 State St., Bridgeport, television station. $223,970. Millard M. Garrison, 1519 Connecticut Ave. N.W., Wash., D. C., consult. engr.

Conn., Hartford—TELEVISION STATION—Hartford Times, Inc., 10 Prospect St., Hartford, television station. $332,000. George C. Davis, Munsey Bldg., Wash., D. C., consult. engr.

Conn., New Haven—TELEVISION STATION—Connecticut Radio Foundation Inc., 221 Orange St., New Haven, television station. $320,000. Craven, Lohnes & Culver, Munsey Bldg., Wash., D. C., consult. engrs.

D. C., Wash.—TELEVISION STATION—Washington Metropolitan Television Corp., 1125 Vermont Ave. N.W., Wash., D. C., television station. $370,400. Robert M. Silliman, 1011 New Hampshire Ave., Wash., D. C., consult. engr.

Fla., Daytona Beach—TELEVISION STATION—News-Journal Corp., 128 Orange Ave., Daytona Beach, television station. $214,150. George C. Davis, Munsey Bldg., Wash., D. C., consult. engr.

Fla., Ft. Lauderdale—TELEVISION STATION—Gerico Investment Co., Box 78, Ft. Lauderdale, television station. $252,900. Craven, Lohnes & Culver, Munsey Bldg., Wash., D. C., consult. engrs.

Fla., Ft. Lauderdale—TELEVISION STATION—Gore Publishing Co., 231 S.E. First Ave., Ft. Lauderdale, television station. $311,100. Weldon & Carr, 1605 Connecticut Ave. N.W., Wash., D. C., consult. engrs.

▲ **Illinois and Missouri**—RADIO-RELAY SYSTEM—American Telephone & Telegraph Co., 1010 Pine St., St. Louis, 1, Mo., microwave radio-relay system to incl. four television channels between Chicago, Ill. and St. Louis, Mo., incl. erection of 9 towers ranging in height from 130 ft. to 275 ft. $4,000,000.

Illinois—TELEPHONE SYSTEM—McDonough Telephone Co-operative, Macomb, extension and imprvts. to rural telephone system McDonough Co. and vicinity $405,000.

Ia., Cedar Rapids—TELEVISION STATION—The Gazette Co., 500 Third Ave. S.E., Cedar Rapids, television station. $200,000. E. C. Page, Bond Bldg., Wash., D. C., consult. engr.

Ia., Des Moines—TELEVISION STATION—Independent Broadcasting Co., 400 N. Michigan Ave., Des Moines, television station. $471,870. E. C. Page, Bond Bldg., Wash., D. C., consult. engr.

Ia., Des Moines—TELEVISION STATION—Cowles Broadcasting Co., 715 Locust St., Des Moines, television station $665,670. Craven, Lohnes & Culver, Munsey Bldg., Wash., D. C., consult. engr.

Kan., Hutchinson—TELEVISION STATION—Hutchinson TV, Inc., 601 Wolcott Bldg., television station, $366,500. A. D. Ring & Co., Munsey Bldg., Wash., D. C., consult. engrs.

Kan., Kansas City—TELEVISION STATION—KCKN Broadcasting Co., 901 N. 8 St., television station, $962,350. M. W. Garrison, 1519 Connecticut Ave. N. W., Wash., D. C., consult. engr.

Kan., Pittsburg—TELEVISION STATION—Pittsburg Broadcasting Co., Professional Bldg., television station. $300,300. Craven, Lohnes & Culver, Munsey Bldg., Wash., D. C., consult. engrs.

Kan., Wichita—TELEVISION STATION—KFBI, INC., 200 East First St., television station. $472,150. M. W .Garrison, 1519 Connecticut Ave. N.W., Wash., D. C., consult. engr.

Kan., Wichita—TELEVISION STATION—Mid-Continent Television Inc., 400 Brown Bldg., television station. $500,000. Weldon & Carr, 1605 Connecticut Ave. N.W., Wash., D. C., consult. engrs.

Ky., Ashland—TELEVISION STATION—Polan Industries, 321 8th St., Huntington, W. Va., television station. $311,000. A. D. Ring & Co., Munsey Bldg., Wash., D. C., consult. engrs.

Ky., Owensboro—TELEVISION STATION—Owensboro on The Air, Inc., 324 Allen St., television station, $265,220. M. W. Garrison, 1519 Connecticut Ave., N.W., Wash., D. C., consult. engr.

Ky., Owensboro—TELEVISION STATION—Owensboro Publishing Co., 100 E. Third St., television station, $279,940. A. D. Ring & Co., Munsey Bldg., Wash., D. C., consult. engrs.

La., Alexandria—TELEVISION STATION—KSYL, Inc., Bolton Ave. and Highway 71, television station, $251,900. George C. Davis, Munsey Bldg., Wash., D. C., consult. engr.

La., Baton Rouge—TELEVISION STATION—Air Waves, Inc., 204 North St., television station, $380,000. Robert L. Silliman. 1011 New Hampshire Ave., Wash., D. C., consult. engr.

La., Baton Rouge—TELEVISION STATION—Baton Rouge Broadcasting Co., Inc., 444 Florida St., television station, $369,500. Millard W. Garrison, 1519 Connecticut Ave., N.W., Wash., D. C., consult. engr.

La., Lake Charles—TELEVISION STATION—Sowela TV, Inc., Box 288, television station, $351,440. M. W. Garrison, 1519 Connecticut Ave., N.W., Wash., D. C., consult. engr.

La., New Orleans—TELEVISION STATION—WSMB, Inc., 901 Canal St., television station. $351,900. George C. Davis, Munsey Bldg., Wash., D. C., consult. engr.

La., Shreveport—TELEVISION STATION—KTBS, Inc., 312 East Kings Hy., television station, $542,900. Weldon & Carr, 1605 Connecticut Ave., N.W., Wash., D. C., consult. engrs.

Mich., Bay City—TELEVISION STATION—Saginaw Broadcasting Co., 2436 Holland Ave., television station, $321,500. Kear & Kennedy, 1302 18th St., N.W., Wash., D. C., consult engrs.

Mich., East Lansing—TELEVISION STATION—Michigan St. Bd. Agriculture, Michigan State College, East Lansing, television station, $461,460. William L. Foss, Inc., 927 15 St., N.W., Wash., D. C., consult. engr.

Minn., Minneapolis—TELEVISION STATION—Independent Broadcasting Co., 400 N. Michigan Ave., television station, $449,830. E. C. Page, Bond Bldg., Wash., D. C., consult. engr.

Minn., St. Paul—TELEVISION STATION—Minnesota Television Public Service Corp., First Natl. Bank Bldg., television station, $572,000. Kear & Kennedy, 1302 18th St., N.W., Wash., D. C., consult. engrs.

▲ **Missouri**—GAS PIPE LINE—Arkansas-Missouri Power Co., Blytheville, Ark., 35 mi. 2 to 10 in. gas pipe line to serve 5 communities, $1,000,000.

Mo., Columbia—TELEVISION STATION—KMMO, Inc., 201 S. 7 St., television station, $596,000. A. D. Ring & Co., Munsey Bldg., Wash., D. C., consult. engrs.

Mo., Kansas City—TELEVISION STATION—KCMO Broadcasting Co., 125 E. 31 St., television station, $529,000. A. D. Ring & Co., Munsey Bldg., Wash., D. C., consult. engrs.

Mo., Marshall—TELEVISION STATION—Missouri Farmers' Assn., c/o Radio Station KMMO, Marshall, television station, incl. studio structure, televizing tower near here. Approx. $500,000.

Mo., St. Joseph—TELEVISION STATION—KFEQ, Inc., KFEQ Bldg., television station. $429,380. George C. Davis Munsey Bldg., Wash., D. C., consult. engr.

Mo., St. Louis—TELEVISION STATION—Broadcast House, Inc., 216 Security Bldg., 319 N. 4 St., Zone 2, television station, tower, etc. Approx. $500,000.

Mo., St. Louis—TELEVISION STATION—St. Louis Amusement Co., 527 N. Grand St., television station, $779,350. William L. Foss, Inc., 927 15 St., N.W., Wash., D. C., consult. engr.

Neb., Omaha—TELEVISION STATION—KFAB Broadcasting Co., 620 Farnam Bldg., television station, $876,700. George C. Davis, Munsey Bldg., Wash., D. C., consult. engr.

N. Y., Ithaca—TELEVISION STATION—Cornell University, c/o M. R. Hanna, WHCU, Savings Bank Bldg., television station. $335,500. Howard G. Smith, Ithaca, consult. engr. CD 8/17/44.

▲ **Ohio**—GAS LINE—Ohio Fuel Gas Co., 99 N. Front St., Columbus, 35 mi. 20 in. high pressure gas transmission line as addnl. facilities for moving natural gas to Columbus from company's underground storage fields in Northern Ohio, Franklin, Fairfield, Delaware and Licking Counties. $1,675,000. CD 9/25/46.

▲ **O., Toledo**—PLAYGROUNDS—City, Welfare Dept., Safety Bldg., park imprvs. est. $277,000; construction of modernization of six adult and junior pools, 2 adult pools at Colony and Ravine Parks, $400,000; four Junior pools for Highland, Ashley, Willys and Point Pl. Parks. est. $480,000. John H. Davis, city engr.

Texas—STORAGE FACILITIES—Lone Star Gas Co., 1915 Wood St., Dallas, gas storage facilities, Henrietta, $150,000; addnl. field gas gathering lines, Henrietta, $110,000; 6 mi. pipe line for moving gas for storage, Henrietta, $85,000; 2,640 hp compressor station, Henrietta, $275,000.

Texas—COMPRESSOR STATIONS—Reef Field Gasoline Corp., 1433 Bissonnet St., Houston, Tex. and Skelly Oil Co., Skelly Bldg., Tulsa, Okla., addnl. compressor station, Vealmoor Field, $200,000; Good Field, $225,000; Reinecke Field, $190,000; East Velamoor Field, $175,000, Big Spring.

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3. New tapered cylinder head reduces mounting height, increases leverage up to 25%.
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5. New friction-free pump assures added power, lower oil pressures.

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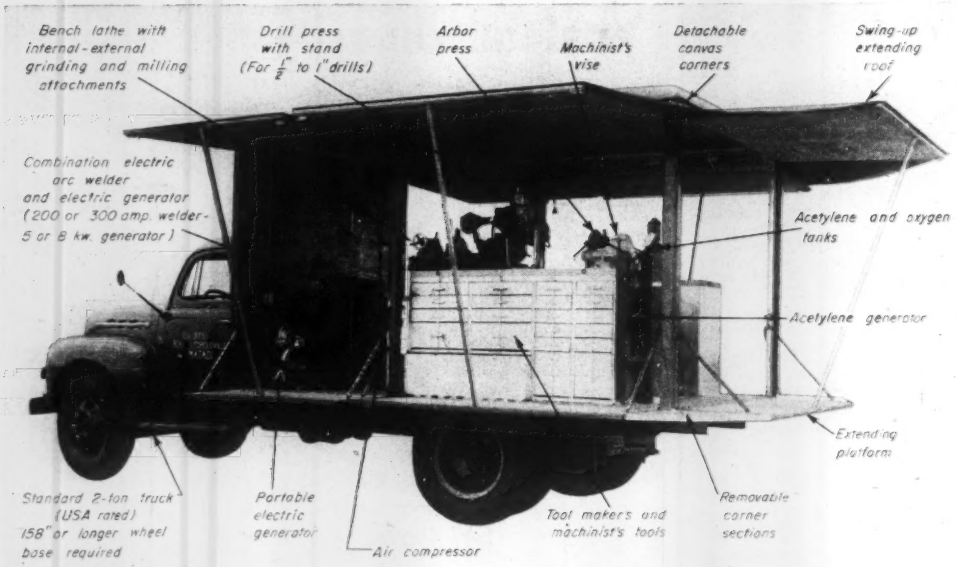
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Arbor press
Machinist's vise
Detachable canvas corners
Swing-up extending roof
Combination electric arc welder and electric generator (200 or 300 amp. welder-5 or 8 kw. generator)
Acetylene and oxygen tanks
Acetylene generator
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Standard 2-ton truck (USA rated) 158" or longer wheel base required
Portable electric generator
Air compressor
Tool maker's and machinist's tools
Removable corner sections

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A new-comer to the solder field is a 40/60 tin-lead type containing resin flux, called Blonde Tape Solder. Manufactured in the form of a metallic tape, and packaged approximately 2½ ft. long x $\frac{3}{8}$ in. wide, a single package is capable of 100 connections. This figure is said to represent nearly twice as many connections as can be made by a similarly priced bar or core solder. No soldering iron or tools are needed—a solder connection may be made with a match or candle—and connections can be made with rapidity. THE BLONDE OIL COMPANY, SOLDER DIVISION, 464 WOODWARD AVENUE, BROOKLYN.

Want torque converters on your "Cat" diesels?

Engineers and supervisors at Caterpillar Tractor Company have long been aware of the ever-increasing industrial applications of torque converters combined with diesel power. After considerable study and experimentation, they now announce that factory-installed torque converters can be provided for six sizes of their industrial engines. Diesels with converters are being used to power excavators, trains, railroad switchers, oil drilling rigs, logging yarders and other equipment.

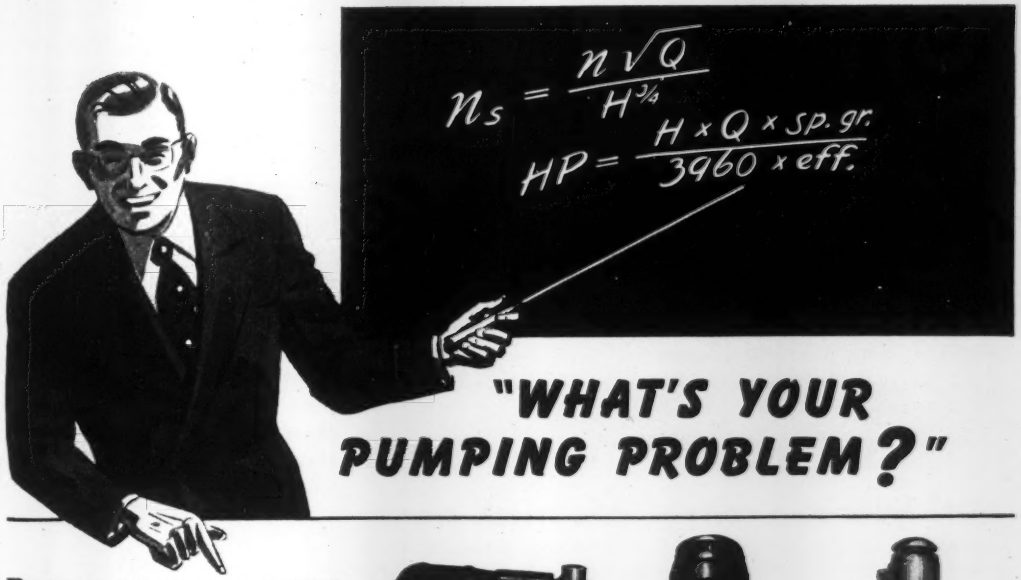
On heavy and varying loads, these torque converters allow the engines to maintain a continuously high output. Turning effort is multiplied considerably at low output speeds. When loads are lifted or lowered, as in crane operation, the converter facilitates the pick up of a standing load or the braking of a load being lowered. Cat Diesel Engines available with torque converters range from 70 to 500 brake horsepower and include the D397, D386, D375, D337, D318 and D315.

The last three are smaller, in-line engines and in their case power can be delivered to the converters with or without a clutch, or through a clutch and reversing gear. Output arrangements include either a stub shaft or chain housing, the latter available in two sizes.

Converters for the first three larger, V-type engines may also be installed with or without a clutch, may be direct-coupled to the engine, or chain-driven. A stub shaft is provided on the output end of each of the converters.

The converters mentioned above are Twin Disc models that use ordinary diesel fuel as hydraulic fluid. CATERPILLAR TRACTOR COMPANY, PEORIA 8, ILL.

("New Products" continued on p. 114)



"WHAT'S YOUR PUMPING PROBLEM?"

PEERLESS HAS THE *ANSWER*

Many of the problems of transferring liquids which are troublesome to you today have probably already been successfully studied and solved for others by our engineering department.

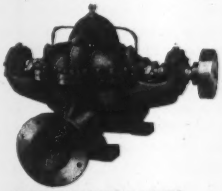
Problems arising from countless combinations of conditions of capacity, head, temperature, pressure, specific gravity, viscosity, volatility, chemical analysis, solids concentration, NPSH and other variables have been resolved by our hydraulic engineers. From thousands of case histories we can counsel with you on everything from pump cavitation caused by incorrect sump construction, to the design limits of impeller diameters as effected by peripheral speeds.

Why not take advantage of a backlog of 30 years of practical pumping experience to solve your liquid transfer problems?

Hand us your pumping problem. We believe we can give you a successful Peerless answer to it from the scores of types and hundreds of models of horizontal and vertical Peerless pumps.

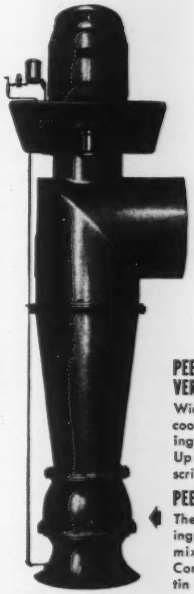
PEERLESS FLUIDYNE PUMPS

A line of face mount and flexible-coupled, electrically driven pumps for almost universal water pumping application. Capacity range: to 5500 gpm. Completely described in Bulletin No. B-2300.



PEERLESS TYPE A PUMPS

The standard of the industry for high quality, split-case horizontal pumps. Capacity range: up to 70,000 gpm. Completely described in Bulletin No. B-1300.



PEERLESS CLOSE-COUPLED VERTICAL TURBINE PUMPS

Widely and successfully used in cooling tower service and pumping from surface water sources. Up to 2500 hp. Completely described in Bulletin No. B-159.

PEERLESS HYDRO-FOIL PUMPS

The giants in the world of moving water. Both propeller and mixed-flow types available. Completely described in Bulletin No. B-148.

Remember—**PEERLESS BUILDS *DEPENDABLE* PUMPS**

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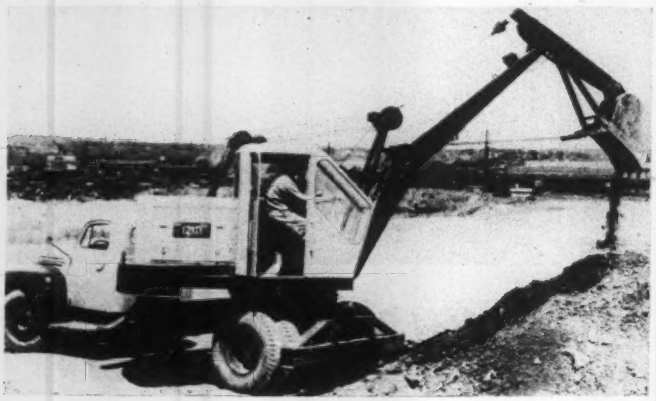

Miti-Mite is a convertible truck crane

Although it's pictured here with a trench-hoe attachment, P&H's Miti-Mite can quickly be changed over for boom and magnet, clamshell, hook, dragline or shovel attachment. Shovel capacity is ¾ yd and crane lift is rated at 7 tons. New design provides a single, compact box that contains all driving machinery. Full-revolving upper section is welded integrally as a power box which forms the machine frame and supports all shafts, drums, gantry, engine, counterweight and front-end attachments. It has a 6-cylinder gas engine and 4-speed transmission, with second speed used for normal digging. HARNISCHFEGER CORP., 4400 W. NATIONAL AVE., MILWAUKEE 46, WISCONSIN.

New line of saws introduced by Disston

A new complete line of circular saws, the Leader Line, has just been announced by Henry Disston & Sons, Inc. From 4½ to 12″ in diameter, these blades for portable electric handsaws are made in all tooth types with center holes to fit every type of mandrel on portable electric handsaws used by building contractors or industrial maintenance departments.

The combination blade incorporates a new and different design to meet portable electric saw manufacturers' demand for one that would both rip and crosscut faster and cleaner, with less strain on small motors.

The Leader Line for bench saw needs is made of alloy steel and includes the new Safe-Feed saw, a type especially designed to prevent kickback. With only 8 teeth, it is said to produce smoother cutting with less power expenditure, helping to prolong motor life. HENRY DISSTON & SONS, INC., PHILADELPHIA, PENN.

Machine copies photos and makes dry prints

Can you imagine making photo copies with no developing, no washing, no fixing, no drying, no dark room or no chemical fumes? The new machine said to be able to do just this is called "Copi-Stat", and it can make legally-accepted copies of anything typed, written, printed or drawn such as: bills, letters, ads, blueprints, specification sheets, drawings, licenses, shipping records, claims, etc.

According to the manufacturer, any office boy or girl can operate it. All that is needed is to expose a sheet of sensitized paper with the original—then combine the exposed sheet with a second sheet of Copi-Stat paper, and insert the two sheets into the machine. Turn the knobs slowly for ten seconds and the two sheets will come out at the other end of the machine. After approximately 15 seconds, peel apart the two sheets, for a dry photo copy that's perfect.

It can produce duplex (two-sided) copies and is available in three different portable sizes; 8½″, 11″ and 17″. All sizes can be equipped with motor, at additional cost, for automatic operation. GENERAL PHOTO PRODUCTS COMPANY, INC., GENERAL PHOTO BUILDING, CHATHAM, NEW JERSEY.

Moto-Patcher eases street maintenance

Ten tons of freshly-mixed material per hour is the boast of this mobile patching unit called the Moto-Patcher shown below. Designed for use behind a truck as shown, the unit consists of a feed hopper, mixing conveyor, bitumen tank and tank heater that uses bottled gas or kerosene. The tank has a 400-gal capacity, assuring adequate supply for uninterrupted production. The mixer running through the bitumen tank gives a drying effect to the aggregate, but bitumen may be circulated when the machine is not mixing, if desired.

Aggregate can be shoveled into the hopper as shown here, or fed into it by a small elevator which is optional equipment. The mixed material can be dropped directly on the road surface or can be deposited on a pan of convenient height for shovel distribution. Although primarily designed for maintenance work on roads and streets, the Moto-Patcher has been used successfully on driveway and parking area jobs. HETHERINGTON & BERNER INC., 701-45 KENTUCKY AVENUE, INDIANAPOLIS 7, INDIANA.

PUBLICATIONS

On-the-Job Applications of the truck-mounted Bantam shovel are featured in an illustrated 4-p folder which also includes production records of owners, with illustrations of their machines in operation. The variety of job records contained in this folder illustrates the versatility of the Bantam which can be used as back hoe, pile driver, clamshell, dragline, shovel, crane, or magnet crane and with various grapples.—SCHIELD BANTAM CO., WAVERLY, IOWA.

Ceiling Lighting System—New Grid-Lite System for use in stores, offices and drafting rooms, described in a 16-p bulletin, consists of a grid or network of steel channels spread over the entire ceiling. These channels carry the wiring and support ballasts, lamps and translucent diffuser shields. Grid-Lite is available for 96,- 72,- and 48-in. T-12 Slimline lamps and with either 425 MA or 200 MA ballasts. Features include: high lighting efficiency; improved comfort-brightness balance; 45-deg cross-wise lamp shielding; pre-wiring plus "plug-in" channels; minimum maintenance.—BENJAMIN ELECTRIC MFG. CO., DES PLAINES, ILL.

Tubular Steel Scaffolding—A new consolidated 20-p catalog printed in two colors, replaces two smaller catalogs formerly issued, one for tower-type scaffolding and one for maintenance trestles. The new publication also includes information on how to set up and dismantle various types of Bil-Jax scaffolding, including rolling, fixed and swing types; gives results of laboratory load tests; and suggestions for maximum safety. Many new items also are included.—BIL-JAX, INC., ARCHBOLD, OHIO.

Magic Pivot—A new 4-p folder, "What Magic Pivot Means to You", for power-saw users describes the principle and advantages of magic pivot, a simple idea that places the pivot point of the saw shoe as close as possible to the saw shaft, as illustrated by eight simplified engineering drawings. Chart demonstrates price, weight and depth-of-cut advantages of Cummins Maxaws with magic pivot. There is also a picture and record of achievements of Fred Wappat, inventor and designer of magic pivot, pioneer of the portable electric saw, and developer of the now widely used telescopic saw guard.—CUMMINS-CHICAGO CORP., 4740 N. RAVENSWOOD AVE., CHICAGO 40, ILL.

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EDITORIALS

Who qualifies as an engineer?

THE SHORTAGE OF ENGINEERS is having effects far beyond what anyone might have expected. For one thing, it has just forced a federal agency to define a professional engineer (ENR Aug. 7, p. 25), which it has done with sense and simplicity.

That action came about this way: Consulting engineers, in order to keep their staffs from being raided by industrial companies, asked Congress to free their engineering employees from salary controls under the Defense Production Act. In complying, Congress made the exemption apply to "professional engineers employed in a professional capacity." That in turn compelled the Salary Stabilization Board to define a "professional engineer" so that employers would know which employees were still under salary controls and which were not. "Professional capacity" already had been defined under the Wage-Hour Act.

Both the final action of the board in defining a professional engineer and the discussion in Congress of exemptions for such engineers should be beneficial to the profession. As the National Society of Professional Engineers points out in its latest legislative bulletin, many Congressmen now have a much better understanding than ever before of what engineers do and of their importance to the national economy.

The definition of "professional engineer" adopted by the SSB is a good one, showing marked similarity to definitions in the better engineer registration laws.

As first proposed, exemptions would have applied only to registered professional engineers employed by consulting firms. When, however, the inequity of that was made apparent by strong protests from engineers engaged in professional work not requiring registration, the exemption was broadened. Registration will be accepted by the SSB as unquestioned evidence that a man is a qualified professional engineer, but the board will also accept evidence of adequate scholastic training and of practical experience in engineering work in the case of unregistered men.

Doubtless some of the idealistic advocates of registration will be perturbed by this realistic approach to conditions as they exist today in the engineering profession. Registration for all men who are practicing may be a desirable objective, but it is far from being attained. And in a field as diverse as engineering, and one in which work as an engineer merges so indistinguishably with management on one margin and with skilled craftsmanship on the other, efforts to force acceptance of registration as the only mark of a professional engineer would be unwise. It would be bound to work hardship on men having a good right to claim professional classification, but who for one reason or another are not registered.

Under the broader definition written by the Salary Stabilization Board, it will be easier for the profession to demonstrate to Congress or to the general public the importance of its place in the national economy. This will be important in such campaigns as the current one to conserve engineering manpower by more efficient use of the engineers now in military service. And it can also be useful in explaining the need to limit the drafting of young engineers to the number actually needed for engineering tasks in the military services.

Rx for refuse

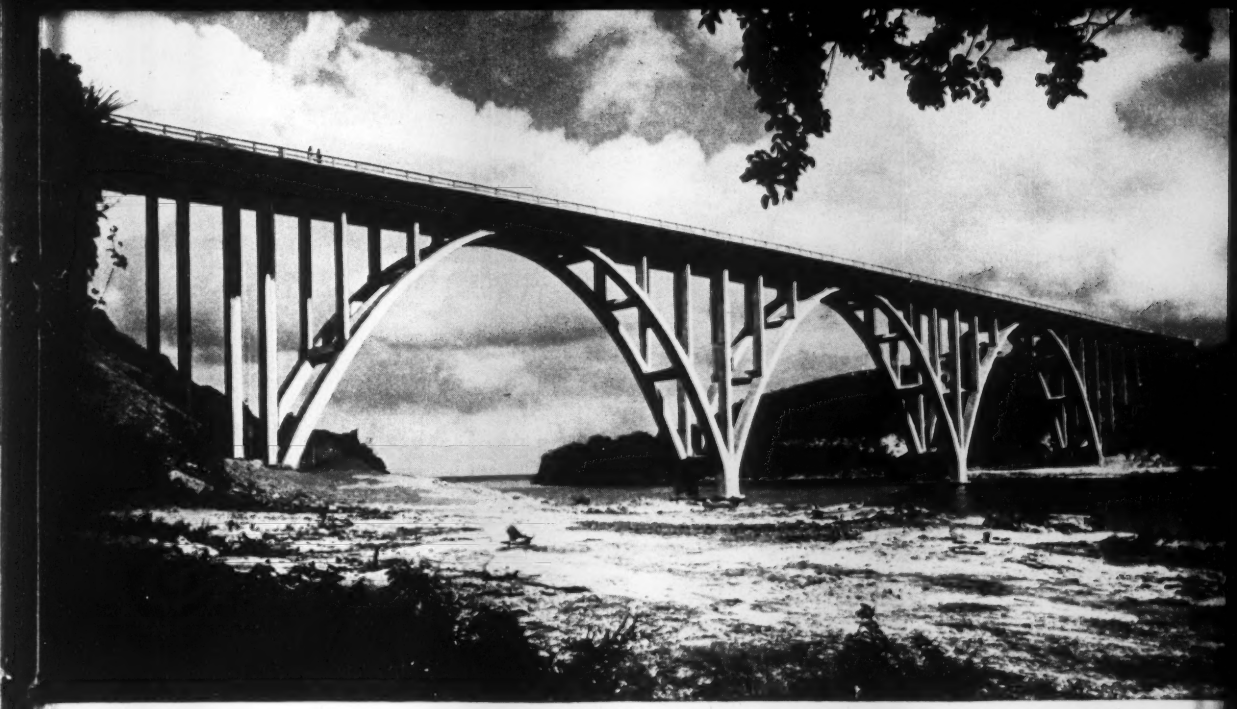
THERE IS NO SINGLE SOLUTION to the sanitation problem presented by garbage and refuse disposal, even though the field of possible solutions is narrowing. The half dozen available disposal methods continue to shake down to a preferable few, yet this hardly means the eventual arrival at one, easy cure-all. Recent experiences with several methods—each successful but each having its limitations or disadvantages—supports this viewpoint.

For example, the fact that a thorough engineering study recommended sanitary landfill for the city of Madison, Wis., does not mean that this method is everybody's answer. It is a relatively inexpensive means of disposal, but only where sufficient low-priced land is available within economic haul distances.

The fact that garbage composting is being practiced commercially in Oakland, Calif. (ENR June 26, 1952, p. 44) unfortunately is not conclusive evidence that fertilizer production is the cure of all ills that garbage-into-gold enthusiasts would have us believe it is. The future of this method in the U. S. (it is well established abroad) depends on our ability to produce a marketable product, near a market and at a marketable price. And this is made more difficult by the stiff competition inherent in the recent stampede of chemical manufacturers to get into the soil conditioning market. Since city budgets include no risk capital, the burden of proof of composting in this country may rest largely with entrepreneurs, who in turn may have a hard time proving the superiority of garbage fertilizer over some of the trick chemical conditioners.

Lastly, incineration retains its prominent place as the method most generally turned to when landfill areas are unavailable. That it is keeping pace with the times is attested by the story on p. 44 of this issue, describing the new plant that is ready for operation in Hempstead, N. Y. This chimney-less, smoke-less, push-button plant is truly cause for optimism. Yet here again it represents a considerable capital outlay, which some cities may hesitate to assume.

There is thus no single solution to the refuse disposal problem. It must remain as always for engineers to decide which of several proved methods is best for particular conditions.



Structure designed under direction of Ing. Jose Menendez of Comision de Fomento Nacional; Manuel Ray, Resident Engineer.

Raymond FORGES AN IMPORTANT LINK IN HAVANA-VARADERO HIGHWAY

This graceful reinforced concrete bridge spanning the Canimar River in Cuba was completed by Raymond ahead of schedule. Hailed as one of the most functionally beautiful structures in the Caribbean, the three-span bridge is 115 feet high and has an overall length of 973 feet—a fitting symbol of the wide variety of Raymond activities.

Constructed for Cuban Comision de Fomento Nacional by Raymond Concrete Pile Company of South America

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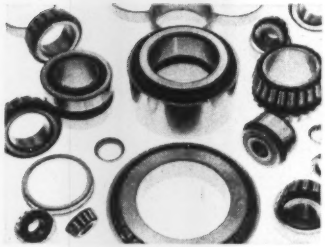
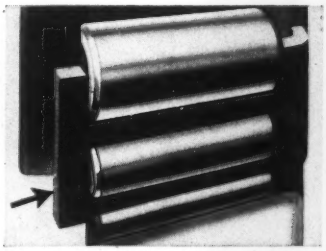
140 CEDAR STREET • NEW YORK 6, N. Y.

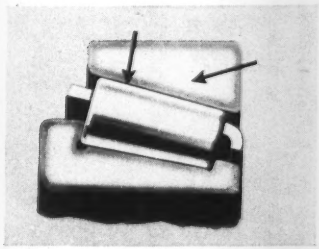
9 good reasons for specifying TIMKEN® tapered roller bearings



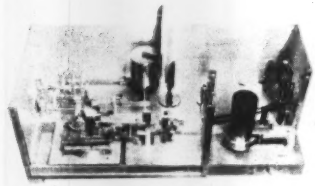
26 TYPES. Because Timken® bearings are made in 26 types, you get exactly the right tapered roller bearing for your job.



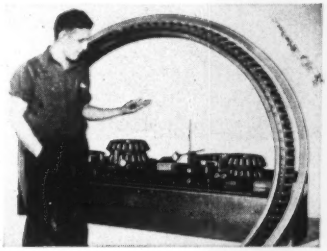
SOFT STEEL CAGE separates the rollers in Timken tapered roller bearings and prevents scuffing.



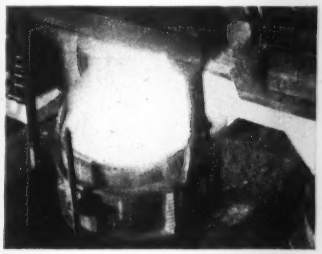
TOUGH INSIDE—HARD OUTSIDE. Case carburizing of rollers and races gives a wear-resistant surface, shock-resistant core.



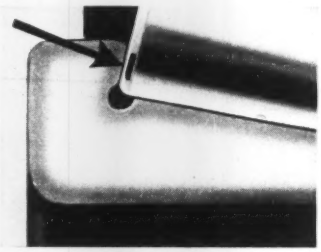
MICRO-INCH FINISH. With help of the profilograph, which measures surface irregularities to a millionth of an inch, the Timken Company has developed a bearing finish of micro-inch accuracy.



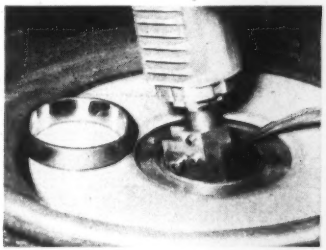
5850 SIZES. If you need a tapered roller bearing smaller around than your finger or as large as 71½" in diameter, you can get it from The Timken Roller Bearing Company.



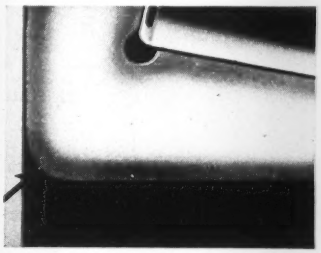
WE MAKE OUR OWN STEEL. Because Timken bearings are made of special alloy steel, produced in the Timken Company's own mills, they have extra strength and wear resistance.



RIB OF CONE maintains roller alignment, prevents skewing, assures maximum bearing capacity.



PRECISION MANUFACTURE makes possible bearings with a maximum runout tolerance of less than 75 millionths of an inch.



GENEROUS RADIUS on the inside diameter of Timken bearing cones permits greater shaft strength.

No other tapered roller bearing gives you all the advantages you get with Timken bearings. Be sure every tapered roller bearing you use carries the name "Timken", the trade-mark of The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ont. Cable address: "TIMROSCO".

TIMKEN

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TAPERED ROLLER BEARINGS

NOT JUST A BALL ◯ NOT JUST A ROLLER ⬭ THE TIMKEN TAPERED ROLLER ⬭ BEARING TAKES RADIAL ⬭ AND THRUST ⬭ LOADS OR ANY COMBINATION